

Public Utilities

Volume 65 No. 4



February 18, 1960

COPING WITH TODAY'S REGULATORY PROBLEMS

By The Honorable George R. Perrine

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Some Neglected Aspects of the St. Lawrence Seaway

By Robert W. Harbeson

« »

A Consumer's Personal Experience with Utility Ownership

By Alfred M. Cooper

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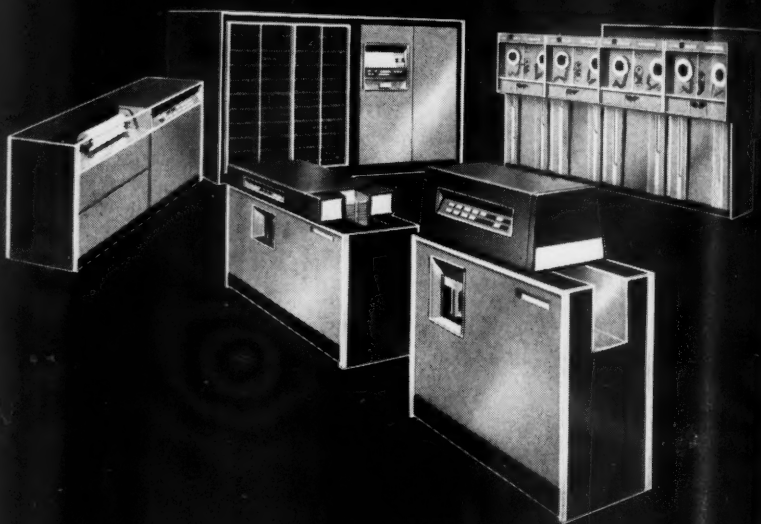
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VOLUME 65

FEBRUARY 18, 1960

NUMBER 4



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An objective, down-to-earth analysis of the St. Lawrence seaway performance.

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A 10-year progress report on

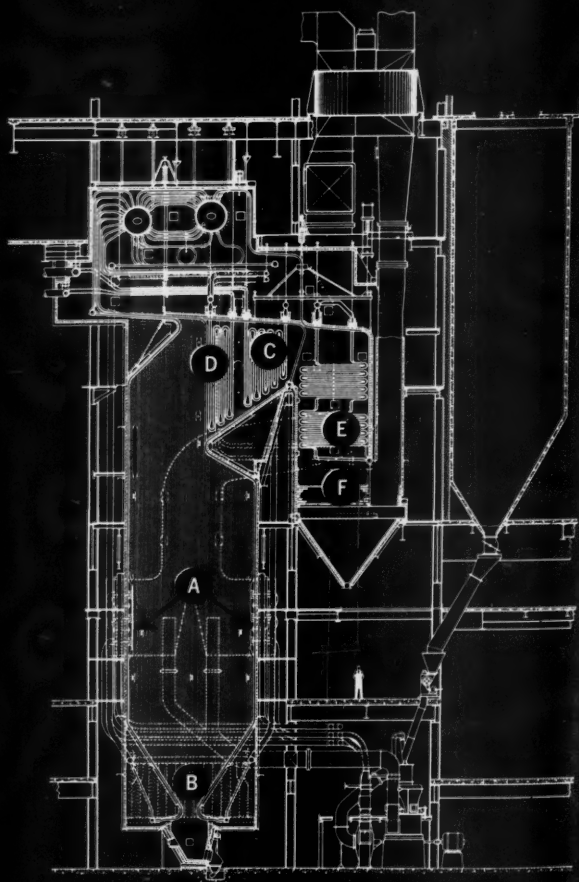
What Reheat has contributed to

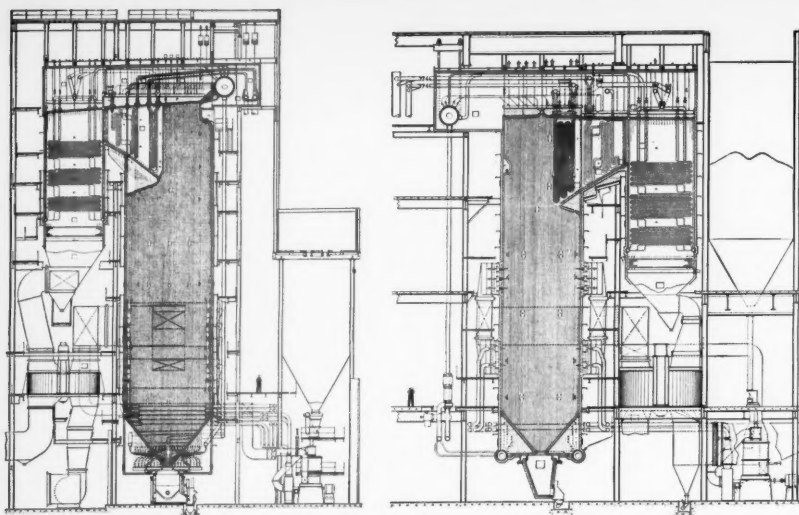
This unit, placed in service at the Edgar Station of the Boston Edison Company in 1949, represented the original C-E design concept of a properly arranged reheat boiler. Its chief characteristics were: tangential firing **A** with tilting burner nozzles to control reheat and superheat temperatures; a dry bottom furnace **B**; reheater surface **C** between the finishing superheater **D**, located at the furnace exit, and the primary superheater **E** in the back pass; economizer surface **F** below the primary superheater.

For the period from August, 1949, to December 31, 1958, this unit had an average availability* of 94.5% and an average capacity factor** of 98.4%.

**Average Availability—In service or available. Not considered available while down for inspection or repair, or while in the process of starting up or shutting down.*

***Average Capacity Factor—Ratio of average hourly output—net kw—to rating of turbine-generator.*





These two recent reheat designs (left — natural circulation; right—controlled circulation) demonstrate the basic similarities between Combustion's first post-war reheat design, as represented by the Edgar installation, and its present-day reheat designs.

Reduced Power Costs

The average rate of fuel consumption per kw-hr over the past decade has decreased from 1.30 lb in 1948 to .905 lb in 1958—a reduction of about 30 per cent. While an important part of this economic gain must be credited to the adoption of higher steam pressures and temperatures, the principal part has resulted from the widespread adoption of the reheat cycle.

C-E's role in the development and application of post-war reheat boiler design has been a major one. The first C-E unit of this design, ordered in 1947 by Boston Edison Company† for its Edgar Station, went into service in August, 1949. As of now—a decade later—a total of 279 reheat units, including 119 of the controlled circulation design, have been ordered by American utilities for an aggregate capacity of 39,100,000 kw. This is equivalent to more than one-third of the total steam-generated capacity of the utility industry as of the first of this year. Of the 279 units, 208, with a capacity of over 26,000,000 kw, are in service.

System generating costs are importantly affected by continuity of service of the more efficient units. The remarkably fine performance of C-E Reheat Units in this respect is evident from the records of 150 units, on which data are available from start-up dates to the end of 1958. The composite record of these units shows an average availability of 95.07% and an average capacity factor of 92.9%. The operating records of these units for the periods covered add up to a total of 560 boiler-years of service.

The consistently good performance records of C-E reheat installations is primarily attributable to the soundness of the original design concept. While numerous refinements and improvements of design detail have been made through the years, the basic arrangement of principal components has remained the same as evidenced by the accompanying drawings of the first unit (Edgar Station) and two recent units.

†Boston Edison also pioneered in the early development of the reheat cycle, having installed the country's first 1200-psi reheat boiler in 1925.

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Pages with the Editors

ONE of the most provocative as well as interesting questions to arise during this postwar period of prosperity and mergers is the question of primary jurisdiction in the field of alleged monopolistic activity involving public utility enterprise. There are those who say, with good reason and much precedent, that the whole issue is an anachronism.

ADVOCATES of this view point out that the very purpose of establishing federal commission regulation was to permit consolidation of public utility activities in the public interest, protected by a very effective substitute for competition, the federal regulatory commissions. They cite the historic examples of two telephone companies or streetcar companies or gas and electric utility companies trying to operate in the same service area. Such a wasteful duplication of facilities inevitably ends in poor service at high rates.

IN any event, that was the theory behind the original amendments to the Interstate Commerce Act which exempted the railroads from the operation of the antitrust laws by placing them under the regulation of the Interstate Commerce Commission. The same pattern was subsequently followed by similar amendments

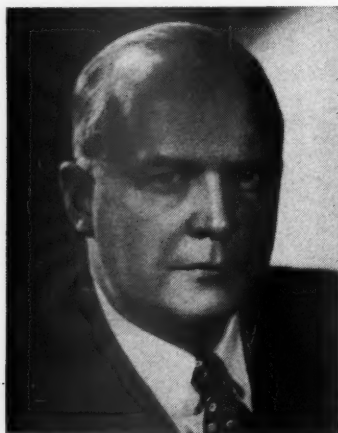
to the Federal Power Act, Federal Communications Act, and the Natural Gas Act. Public utilities subject to such regulation were ostensibly immune to anti-trust prosecution, provided consolidations, mergers, or other combined activities had been approved by the respective regulatory authorities as being in the public interest.

BUT there apparently has arisen some new thinking within the Department of Justice that public utilities subject to federal regulatory statutes are not necessarily immune by that fact from anti-trust prosecution, where it can be shown that monopolistic practices have developed contrary to public interest. Of course, stating it in that way begs the question, since the federal commissions have assumed that they are the guardians of public interest in the exercise of their jurisdiction under the federal laws.

BUT the situation is not always clear, especially in cases involving combined utility and nonutility operations. It was for this reason that the Justice Department began suit under the antitrust law against the Bell system early in the World War II period to secure a dissolution or divorce of Western Electric Company—manufacturing subsidiary of Bell.

AND it was in recognition of the distinction that regulated utility combinations might be all right as long as they do not involve nonutility activities, that the Justice Department agreed in 1956 to a consent decree ending its long-pending antitrust suit. Under this agreement the Western Electric Company agreed to confine its activities henceforth to the service and supply of the regulated telephone activities of the Bell system.

YET the same question keeps popping up elsewhere in the regulatory field. And, apparently there exists to some extent,



GEORGE R. PERRINE

Good Telephone Service and Good Telephone Earnings Go Hand in Hand

There is no way to have one without the other

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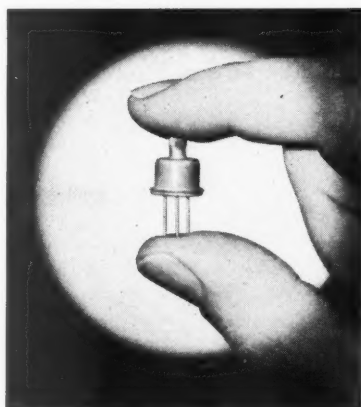
It works two ways.

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ways we must keep building ahead to meet the needs of tomorrow.

These needs are growing every day. Just the gain in population alone gives some idea of their size.

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in the United States. More and more communication services will be required by people, industry and defense.

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BELL TELEPHONE SYSTEM





ROBERT W. HARBESON

within the Justice Department, the viewpoint that even regulated utility companies, married with the blessings of a federal regulatory commission, might nevertheless engage in operations subject to the outside disciplines of the Sherman and Clayton acts. It will probably take a showdown decision in a fairly high court, if not the United States Supreme Court, before this ghost is laid, one way or the other.

FROM the regulatory commission's point of view, the problem would seem to boil down to a question of proof. If it can be shown that one combined utility company, with or without side-line subsidiaries, can better perform in the public interest than two separate corporate organizations, just what is there left for a collateral antitrust prosecution to accomplish? What objective could be served by proceedings which would duplicate in an unaccustomed forum the demonstration of how public interest is protected by regulation as a substitute for competition, or at least for separate corporate organizations.

TWENTY years ago legal observers would never have thought the question would arise under the well-settled precedents already on the books. It goes to show that some basic questions—like that of rate base valuation or the test of a reasonable return—can never be considered settled as long as time changes and economic conditions are themselves un-

settled. The present-day busy regulatory commissioner is not solely puzzled by such basic questions, to put it mildly. There is a host of very new and constantly changing problems.

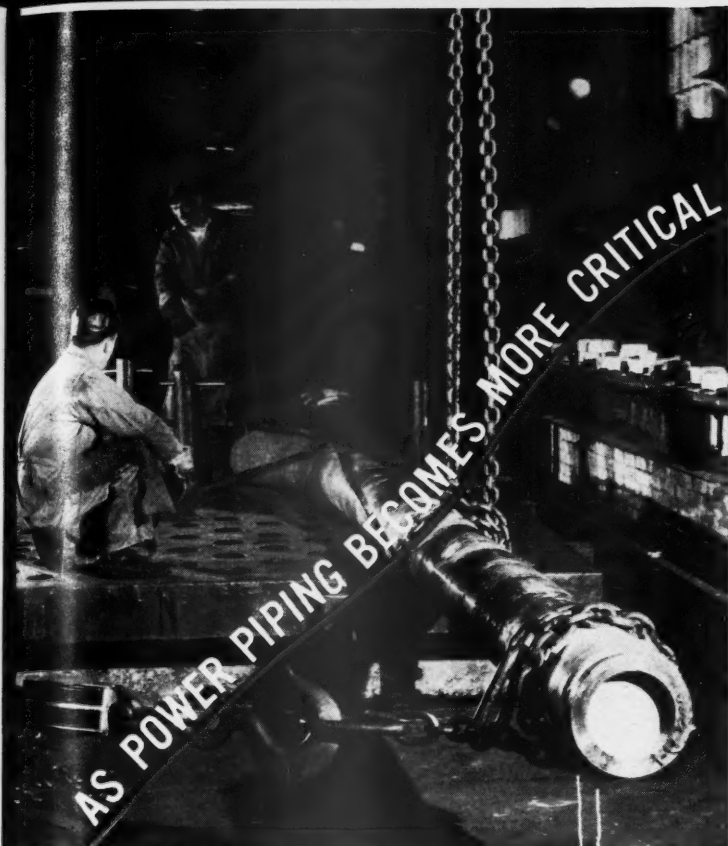
THE opening article in this issue by a very practical regulator, GEORGE R. PERRINE, chairman of the Illinois Commerce Commission, tells the story of the modern regulatory commission's continuous struggle to cope with ever-changing problems. CHAIRMAN PERRINE, who is also this year president of the National Association of Railroad and Utilities Commissioners, is a native of Illinois but a graduate of the University of Southern California (AB, '30) and the University of Wisconsin Law School (SJD, '33). He was admitted to the Illinois bar in 1933 and engaged in private practice in Aurora, Illinois, until 1940 when he went into Republican state politics. He was appointed to the Illinois Commerce Commission in 1942 and in 1953 was appointed by Governor Stratton to be chairman of that group. He has been active in fraternal and bar association work and is at present a member of the Section of Public Utility Law of the American Bar Association.

* * * *

ROBERT W. HARBESON, whose article on "Some Neglected Aspects of the St. Lawrence Seaway" begins on page 227, is a native of Ohio, but at present a professor of economics at the University of Illinois. He was educated at Western Reserve University (AB, '25) and Harvard University (PhD, '31). He has taught at Rutgers and has also served as a transportation economist for various transportation agencies, including the Interstate Commerce Commission. He is the author of a number of government reports and about forty articles in the field of transportation and public utilities.

THE next number of this magazine will be out March 3rd.

The Editors



KELLOGG'S PIPE BENDING TECHNIQUES KEEP PACE

A length of stainless steel piping is bent to close tolerances at Kellogg's Jersey City shops. Dam in pipe end retains inert gas introduced to prevent oxidation.

Bending stainless, chrome-moly, and carbon steel power piping to meet exacting specifications of length and wall thickness, as well as contour, is a Kellogg skill reflected in a higher quality and lower cost product.

Among the advanced fabricating techniques pioneered by Kellogg at its Jersey City shops is the use of inert gas to purge pipe interiors of oxygen during the heating and bending cycle. This technique assures freedom from internal scaling and provides a clean interior surface.

By its ability to predetermine bending effects such as pipe wall thinning, cross section variations and pipe stretch, Kellogg maintains specification requirements and top quality while minimizing bending costs.

Kellogg welcomes inquiries on its complete design, fabrication, and erection service to the power piping industry from consulting engineers, engineers of power generating companies, and manufacturers of boilers, turbines, and allied equipment.



Operator checks pressure of inert gas being forced through piping during heating to prevent internal scaling. Gas is also retained in the piping during bending.

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POWER PIPING—THE VITAL LINK

Coming IN THE NEXT ISSUE

(March 3, 1960, issue)



THE PROBLEM OF UTILITY DONATIONS

Public utility companies may be getting into the position of "d --- if they do, and d --- if they don't" in view of recurrent criticism of large corporation donations to local charities and other civic and social causes. James W. Carpenter, former vice president, Long Island Lighting Company, has made a careful study of the arguments, pro and con, and reaches the conclusion that under modern conditions of operation no public utility can acquit itself of its responsibility of good citizenship in its service area unless it donates liberally and co-operates actively with such campaigns as the Community Chest, Red Cross, and United Givers. Furthermore, outmoded statutory restrictions against charging contributions to business expense, such as were enacted in New York during the depression years, place an unfair burden not only on the utilities but upon those who stand most in need of assistance.

THE SUPREME LAW OF THE LAND

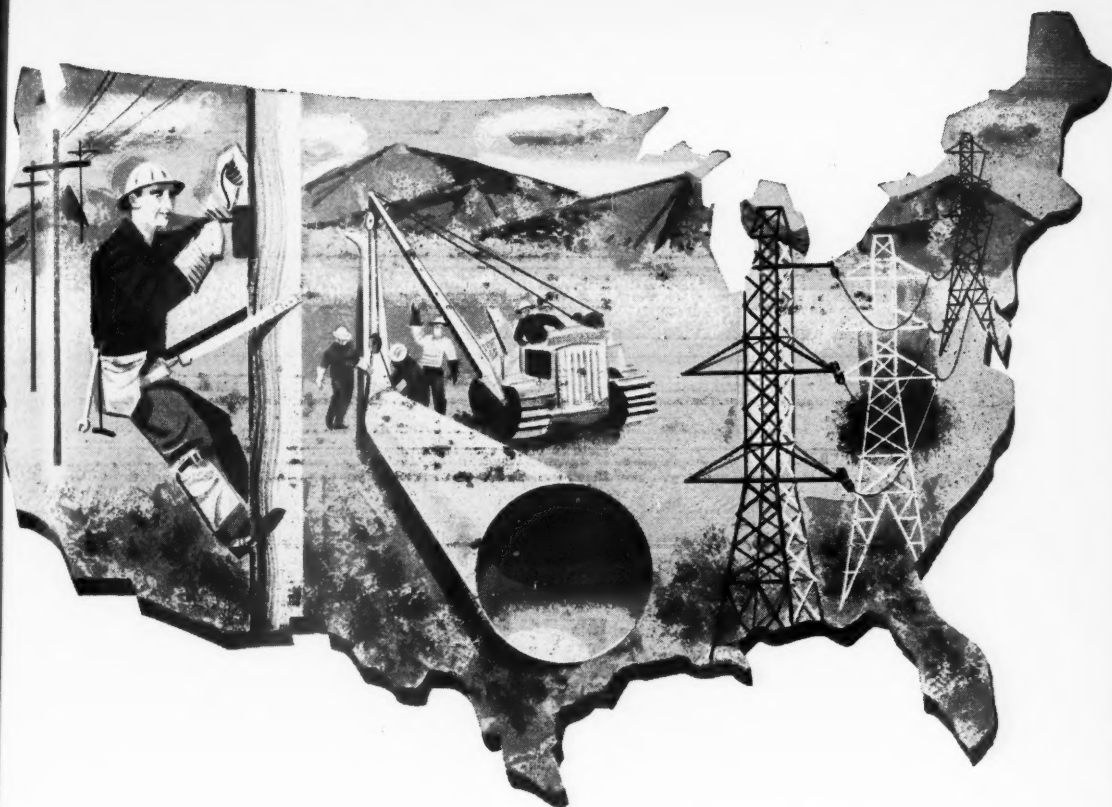
Last fall, there appeared in PUBLIC UTILITIES FORTNIGHTLY an article by the president of the California Public Utilities Commission, Everett C. McKeage, in which he questioned whether a U. S. Supreme Court decision is necessarily the law of the land. Pursuing this provocative question further, Judge McKeage, in response to a number of inquiries and comments from readers, undertakes to show by precedent and reason that a decision of the highest court is only the law of the case (decided) not the law of the land. Courts cannot create law, says Judge McKeage. And decisions in particular cases are too transitory to demand strict and unyielding adherence to the doctrine of "stare decisis." Not all readers will agree, nor all lawyers. Certainly Alexander Hamilton had his own ideas on the subject. Judge McKeage quotes selectively from Hamilton, Frankfurter, and others on the generality that ours is a government of law and not men. The fact that the highest court can and has so often overruled its own earlier pronouncements is examined as a basic reason why the court's opinions, however well decided, cannot be the irrevocable law of the land.

THE BLIND SPOT IN UTILITY RETIREMENT PROGRAMS

The public utilities were in the forefront of all industries in establishing pensions and other retirement and separation benefits for employees. They still are now that such benefits, augmented by many more "fringe benefits," have become an accepted pattern of all industrial employment in our national economy. But the matter of group insurance, group hospitalization, group medical expenses, assistance—all have interposed a time limit on benefits which must stop with actual employment unless other arrangements are made. Willard F. Stanley, president, Corporate Services, Inc., of New York city, considers this the blind spot in utility retirement programs and predicts that it can raise havoc with utility public relations unless it is corrected. Furthermore, correction is not easy nor cheap. The author tells how it might be done. He concludes that it is penny-wise and pound-foolish to make substantial contributions to an overall retirement program and then hold back on the additional dollars needed to remedy this irritating situation.



Also . . . Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.



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*Former general counsel,
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ciation of America.*

"We haven't today the one industry statesman to whom all segments of the (oil-gas) industry would listen. In the past we had men who would only have to say a few words on something like this (overrefining and import) problem and everyone would take heed."

RAYMOND L. BRUCKBERGER
Dominican priest.

"By one of those historical paradoxes which it would be impossible to believe, if it were not true, France, reputedly the least puritan of nations, was the most puritan of all in its Revolution. America, on the other hand, founded by the Puritans, and still bearing upon its ideas and ways of life the weight of Puritanism, made the most human, the least puritan revolution of all."

EDWARD N. GADSBY
*Chairman, Securities and
Exchange Commission.*

"The best tip I can give anyone is: Watch it. It is utterly incomprehensible why people will buy some of the things that come across my desk. All we can do is educate people to use the same care in buying securities as they do in buying automobiles. . . . I cannot visualize any legislation which would protect the American investor against a falling market, nor can I conjure up any reason why, or any mechanism by means of which, Congress should try to build a ratchet into stock market prices which will prevent their decline."

C. R. MITCHELL
*President, First Federal Savings
and Loan Association,
Kansas City, Missouri.*

"One of the principal temptations of prosperity is to fall into the trap of thinking that because things are so good today, they will be as good or better in the tomorrows to come. . . . It does no harm to recall that some of the mistakes which first brought on the depression of the 1930's and then caused these difficulties to be prolonged could have been avoided, if during the heyday of the 1920's appropriate measures had been taken to temper the boom, or at least to avoid some of the distortions in the economy which were then apparent to some persons."

EDITORIAL STATEMENT
Bartow (Florida) Democrat.

"Sometimes statistics provide very boring reading, yet there are times when they contain information which should be of interest to every one of us. . . . like, for instance, the information that in 1930, 664,000 persons were in the employ of the federal government . . . today, exclusive of our armed forces, the number has reached 2.1 million, an increase of more than 200 per cent . . . the same statistician reports that in 1930 taxes took 13 per cent of the national income, while today the figure has reached 29 per cent . . . in 1930, the per family share of the national debt amounted to \$540, while today the figure is \$5,500."

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You are well aware of what the rebirth of the outdoor gas light has done to give utility companies a remarkable bonus loadbuilder twelve months of the year. You are all interested in any program which helps build more profitable customer use of gas.

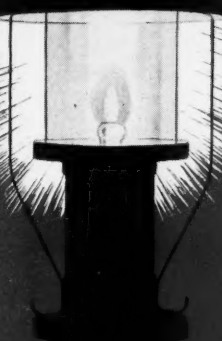
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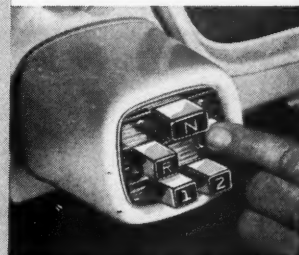
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Built-in "Workbench" is formed when you drop the door of the horizontal compartment on either side. Handy, speeds your work every day.



LoadFlite push-button automatic transmission, found only on Dodge trucks, provides greatest driving ease plus top economy. Optional.



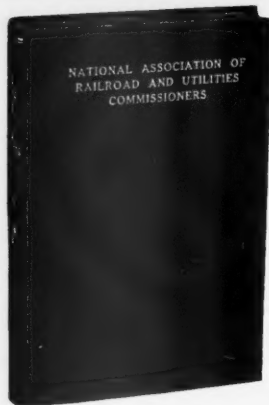
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UTILITIES

A.l.m.a.n.a.c.k

FEBRUARY - MARCH

Thursday—18 <i>National Society of Professional Engineers begins winter meeting, Wichita, Kan.</i> 	Friday—19 <i>Edison Electric Institute, Commercial Cooking and Water Heating Committee, ends two-day meeting, Atlanta, Ga.</i>	Saturday—20 <i>Texas Telephone Association will hold annual convention, Dallas, Tex. Mar. 7, 8. Advance notice.</i>	Sunday—21 <i>American Society of Bakery Engineers will hold annual meeting, Chicago, Ill. Mar. 7-10. Advance notice.</i>
Monday—22 <i>National Rural Electric Co-operative Association begins annual meeting, St. Louis, Mo.</i>	Tuesday—23 <i>Radio and Television Executives Society begins seminar, New York, N. Y.</i>	Wednesday—24 <i>American Institute of Laundering begins annual meeting, Chicago, Ill.</i>	Thursday—25 <i>Southwestern Legal Foundation begins annual institute on eminent domain, Dallas, Tex.</i>
Friday—26 <i>National Association of Corrosion Engineers will hold annual convention, Dallas, Tex. Mar. 14-18. Advance notice.</i> 	Saturday—27 <i>American Water Works Association, Illinois Section, will hold annual meeting, Chicago, Ill. Mar. 16-18. Advance notice.</i>	Sunday—28 <i>Mid-West Gas Association will hold annual meeting and convention, St. Paul, Minn. Mar. 21-23. Advance notice.</i>	Monday—29 <i>Pacific Coast Electrical Association begins business development conference, Long Beach, Cal.</i>
MARCH Tuesday—1 <i>Kentucky Telephone Association begins annual convention, Lexington, Ky.</i>	Wednesday—2 <i>American Gas Association, General Management Section, ends three-day conference, Pittsburgh, Pa.</i>	Thursday—3 <i>Southern Gas Association, Distribution Section, begins round-table conference, New Orleans, La.</i>	Friday—4 <i>Southeastern Electric Exchange will hold annual conference, Boca Raton, Fla. Mar. 21-23. Advance notice.</i>



Courtesy, Northern States Power Company

He Welds So You Won't Freeze

Looking like a man from Mars, this welder is one of many who joined sections of pipe in Northern States Power Company's big \$53 million project to bring gas comfort to 12 communities before winter set in.

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Public Utilities

FORTNIGHTLY

VOLUME 65

FEBRUARY 18, 1960

NUMBER 4



Coping with Today's Regulatory Problems

- Utilities still have a big educational job cut out for them because the public remains uninformed about its problems.
- A solution to the problem of gas pricing must be found.
- Regulatory bodies may have to re-examine their rate of return philosophies in light of today's high cost of money.
- Funds resulting from accelerated depreciation should be used for plant expansion.

By the Honorable **GEORGE R. PERRINE***
Chairman, Illinois Commerce Commission

THE people of Illinois have been especially cognizant of the gas industry's needs. The Natural Gas Pipeline Company of America was conceived in the Middle West for the purpose of bringing natural gas from the Southwest to the burners of Illinois' utilities. At approximately the same time, Panhandle Eastern Pipe Line Company made natural gas available to other segments of Illinois. Still later several other interstate natural gas pipelines were built into or

through Illinois, with the result that practically every portion of the state now is being served through interstate natural gas lines. During the first ten years, even with the very low rates, both wholesale and retail, that then prevailed, it took a selling job to induce consumers to install equipment and use natural gas. Then, gradually, as competitive fuels increased in price, the consumption of the commodity increased and larger quantities of natural gas were in demand.

Ultimately gas became available in increasing, although still inadequate,

*For additional personal note, see "Pages with the Editors."

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amounts. At the close of World War II it was found that the cost of competitive fuels had run far ahead of the then existing cost of natural gas and the heating market was immediately flooded with requests for heating with this all-important fuel. As a result of this competitive fuel situation, the distribution companies in Illinois were the recipients of a substantial gravity flow of prospective business without any sales effort on their part, thus causing a tremendous shortage of the commodity. Primarily to satisfy demands for space-heating service, it became mandatory that distribution companies establish numerical waiting lists for this important utility service, including not only space-heating service but gas for industrial and commercial uses as well.

I believe the Illinois commission was one of the first to meet this situation by issuance of restrictive orders. While the commission was not happy with this situation, it realized that in order to protect the consumers then on the lines of our gas distribution systems and to avoid possible hazards to health and safety, it was in the public interest to take this action. Peoples Gas system and other distribution companies in Illinois, together with our commission, realized that drastic steps would have to be taken if this condition were to be alleviated. For a short period of time the extension of gas public utility service into new areas of the state, until such time as existing service areas could be adequately served, was actually frowned on.

Underground Gas Storage

As another possible solution to this problem, the distribution companies

conceived the idea that underground storage of gas during summer months to meet the winter demands would enable the commission to lift at least partially some of these restrictions. In line with this thinking, the 1951 session of the state legislature, at the behest of the distribution companies, the pipeline companies serving the state, and the Illinois commission, passed enabling legislation granting the right of eminent domain to natural gas companies for underground storage purposes. The necessity, and reason, for this action by the legislature was the fact that there had been discovered in an area near Herscher, Illinois, a potential geological structure in the nature of a huge underground dome suitable for gas storage in large quantities.

The Peoples Gas Light & Coke Company, in conjunction with other gas distribution companies, and with the aid of this new enabling legislation, immediately proceeded to develop the Herscher dome for the storage of large quantities of natural gas.

At about the same time the Peoples Company proceeded to engineer and construct another large natural gas pipeline system—namely, Texas-Illinois Natural Gas Pipeline Company—designed primarily for the purpose of supplying additional quantities of natural gas to the greater metropolitan area of Illinois, commonly called Chicagoland. Everyone thought that with these increased facilities the matter of supply would be well under control, at least in one area of the state.

Other underground storage facilities are now in the process of being developed at Herscher and in other areas of Illinois.

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Members of the commission sincerely hope that these storage projects can be pushed to the end that the sale of "dump" boiler fuel gas may be drastically reduced. The commission feels that the nation's most valuable fuel, natural gas—at least in the minds of the consuming public, the No. 1 fuel—should be conserved for its superior fuel uses.

Commission Acts to Help Gas Shortage

SOON after Texas-Illinois inaugurated its initial gas supply to the Illinois area and other natural gas supplies in various parts of the state had been increased, it became apparent to the commission that even more supplies were needed to meet the insatiable demands by the consuming public for this superior fuel. With nearly one-half million homes in northern Illinois and northern Indiana on the waiting list for gas space-heating service and the demand increasing daily during the past three years, the commission sought and canvassed for additional supplies. While it may seem that it is not the prerogative of a regulatory body to attempt to force management into expansion, we firmly believe that when a con-

dition such as existed during the past years was growing steadily worse rather than better, it was about time for the local regulatory body to step in and act in an attempt to alleviate the pressures brought about by this situation.

It might be well to add that the commission has given its utmost support to the Illinois distribution companies in the installation and use of manufactured or liquefied petroleum gas facilities and other methods of supplementing available natural gas supplies during emergencies or peak periods of demand in order to meet the requirements of applicants for space heating and other firm services.

Regulatory Commissions Here to Stay

MANY people in the utility industry argue that regulatory commissions should be abolished and the utilities should be allowed to proceed like other industry on a laissez-faire basis. Well, one may argue as long as one sees fit about this matter, but I believe one will find that the regulatory agencies are firmly entrenched in the eyes of the public, legislators, and the Congress of the United States. I further believe that regulatory commissions serve an all-impor-

Public Service All Important

THE Illinois commission has constantly taken the stand that the public welcomes additional supplies of natural gas and that the commission refuses to select which pipelines should deliver it. In other words, it has been of the opinion that there should be no monopolistic rights in supplying a particular service area if the present supplier cannot or will not supply an adequate amount of gas to meet the requirements of the distributors and the public. The commission believes that service to the public is the paramount issue and consequently has insisted that applications pending before the Federal Power Commission to meet these exigencies be supported by the Illinois Commerce Commission and should be expedited as promptly as possible.

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tant purpose by providing a liaison between the public and the operating utility—a void that might easily become dangerous if it were not properly filled.

In Illinois, the commission encourages the utilities under its jurisdiction to confer with it constantly in regard to their problems.

A well-informed commission is as valuable to the operating utility as it is to the public. Only by knowing what the different problems are can a commission render intelligent regulation. The ideal equation, to my way of thinking, is to regulate to the degree that will produce healthy, well-financed utilities that are capable of adequately serving the public's needs at a cost commensurate with the demands and value of the service.

I THINK another very important facet of gas regulation is to regulate as expeditiously as possible. There is no reason in the world why a regulatory body cannot expedite its orders to the end that the public convenience and necessity are met at the time they need to be met and that the utility involved knows where it is going at an early date. In keeping with this argument, the commission has many times ordered night sessions and the commissioners, themselves, very frequently take work home over week ends.

I know of one specific instance where a certain state commission had a case before it that was considered an emergency. Long before that commission entered its order in the case the need for the proposition had abated. It happened to be that the same question also involved the state of Illinois. The Illinois commission issued an emergency order within forty-eight hours after the application for relief was

filed and it was fully informed in regard to the nature of the emergency.

More Educational Policies Needed

I THINK it should be the constant goal of the American Gas Association and its members to see to it that the proper publicity is being released daily to the press.

I believe articles should be written and placed in magazines of wide circulation and common reading about the gas industry, about the electric industry, and other utility industries. I believe that a well-written and well-placed article in a magazine such as *The Saturday Evening Post* about the problems of the gas industry and the tremendous strides that have been made by the gas industry during the last twenty-five years would do more good than twenty-five pages of paid advertising. A well-written article about problems of the gas industry, the romance of the industry, together with the impact of the Phillips case and other major decisions upon it, and the different regulatory lags with which it is confronted, to my mind would be of tremendous importance.

For example, an article in the September, 1959, issue of *Fortune* magazine should afford ample reasons for regulators, producers, or the gas industry to accept the challenge set forth therein and provide the public with the other side of this story.

It is easy to dress up an ad for a newspaper or a periodical, but the average consuming mind reading that periodical or newspaper immediately says, "Well, that is slanted for their own good." Whereas, if an author were to write a story about the offshore drilling and the tremendous

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Reasons for Ignorance about Public Utilities:



1. IN MY humble judgment much of the public opinion that generates in and around the average rate case is due largely to misunderstanding and ignorance of the subject matter. Politicians use the utility issue all too often as a means of inciting public interest in their campaigns. During such types of campaigns little regard is given to the truth and ultimate results to the public are purely secondary.

2. What per cent of the public understands the difference between rate of return to a utility and the amount of dollars earned per share to the same utility? Even most well-educated lawyers, accountants, and engineers, unless they are actively engaged in the public utility field, have not the slightest conception of the elements that must be considered in arriving at a fair and equitable rate of return to a utility.

3. Even members of the press, whose job it is to keep the public—theoretically, at least—intelligently informed, lack woefully in their understanding of rate-making procedure and problems.

work that is being done to keep the homes warm in the Middle West during the cold winter nights, it would be of much greater consequence.

Rate Order Releases

It seems that the usual timing of the average rate order release is wrong so far as the Illinois commission is concerned. The last six major rate cases that

it has resolved have been rather large in dollar amount even though small percentage-wise. Blaring headlines have covered the front page of the daily major newspapers announcing the multimillion-dollar increases. Down in the main part of the story, if the reader gets that far, he can determine about how much this means to the individual consumer per month or year, which invariably is not a great

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amount of money, and quotes from remarks by the commission chairman or the president of the utility involved are frequently included. Then, as one turns to the financial page, he invariably finds that the utility concerned has just announced its quarterly earnings are far in excess of the year before.

So far as the timing of these orders, there is no one to blame but the utility and the regulators. But I think this is one area where perhaps the commission and the company should more closely co-operate. Mind you, I am not saying it should in any way try to deceive the public—I do not mean to imply this at all—but because of the lack of public knowledge in regard to these matters, I think it would be highly advisable that the news releases be further spaced in point of time. It is unfortunate that the average reader can see only the blaring headlines that "Utility Rates Are Increased by Millions" and does not pursue the article to see how little he is actually affected as an individual consumer.

Commission Philosophy and Policies

THE Illinois Commerce Commission's philosophy and policy have led it in recent years, in the interest of better regulation, to adopt automatic fuel clauses, not only for the electric companies in Illinois but also for the gas distribution companies. A fuel clause, we believe, tends to stabilize the relationship between revenues and expenses and thus tends to maintain the rate of return found by the commission to be fair and just in its orders and thereby reduces the number and frequency of proceedings involving this subject matter.

FEBRUARY 18, 1960

By the employment of fuel adjustment clauses, it is possible for our distribution companies to recoup filed pipeline increases whether or not subject to refund, as soon as the distribution companies are forced to pay the same. When the Federal Power Commission has decided the final rate in a particular case and refunds, if any, including interest, are made to the distribution companies, adequate provisions are also included in the fuel clauses to see that these excess charges, if any, are returned to the consumer. It may prove interesting that when the first automatic "Adjustment for Cost of Purchased Gas" clause was approved by the commission several years ago, there were no court decisions in support of such a provision. Since that time higher courts, including the Illinois state supreme court, have approved this action.

The commission has taken a very strong position in the matter of accelerated depreciation. I realize this is a highly controversial subject, but I also would like to say that it feels it is right in this matter and to date no one has proved it otherwise. It is the philosophy of the commission to allow rates to distribution companies that will produce an adequate rate of return to those companies without using the fiction of accelerated depreciation to arrive at this result.

Field Cost of Natural Gas

WHILE many of the comments I have just made may not be new horizons in the field of regulation, at least they represent my personal feelings in the matter. I feel it necessary to mention one other problem in which I am sure everyone is equally interested and that is: the cost of natural gas at the city gate. Dur-

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ing recent years the commission has been confronted with numerous increases in the cost of natural gas paid by distribution companies, and, in turn, the general public. Many of these are attributable to increased facilities, and, as everyone knows, the fixed charges are rather inflexible and are the cause for some of the increases. On the other hand, the field cost of natural gas is another important factor that triggers many increases in the rates of pipeline companies and, in turn, affects the cost and availability to the ultimate consumer.

THE Federal Power Commission, during the past five years, and more particularly since the U. S. Supreme Court's decision in the Phillips case, has been struggling with this problem and, as yet, has not come up with a uniform or acceptable formula for regulating producers' prices. At least that is what the producers say.

The Illinois commission believes that in order to reach an early solution of this problem, firm and objective action should be taken at an early date, and I do not mean to be unduly critical of the efforts

to date of the Federal Power Commission. An acceptable formula will have a tendency to stabilize the cost of such gas and encourage the exploration and development of additional gas reserves and reduce the frequency of pipeline increases.

I AM also aware of the fact that no matter what form of rate base, depletion allowance, or other relevant factor is used by the Federal Power Commission in arriving at a final basis for the determination of a fair field price, the end result will not be accepted without challenge or litigation in the courts which will further delay the final adjudication of this problem.

The gas distribution companies cannot make sound business commitments upon which the eventual development and growth of the natural gas industry is based, until such time as the Federal Power Commission has promulgated and established a sound and reasonable basis for the establishment of fair and reasonable prices at the wellhead. In the meantime, it appears that the real regulators of the field price of natural gas, and in turn the cost to the ultimate consumers,

Make Use of "Accelerated Depreciation Created" Funds

THE commission feels that the amounts accumulated in reserve as a result of accelerated depreciation should be held in the reserve account specifically earmarked for future taxes. To allow these sums to flow through to the stockholders, it believes is the wrong approach. It is of the opinion that if these sums of money are held by the utility for future taxes and used by the utility, for working capital, that said utility is in a more sound financial position and very particularly so at the present time with the present existing rates for the cost of money. It believes its position in this matter is consistent with sound rate-making and accounting principles and hopes that the same may be followed by the Federal Power Commission and the Securities and Exchange Commission.

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are the producers, especially those with so-called "initial sales" to new pipelines or existing pipelines desiring to increase reserves.

Pricing Delays Have Adverse Effects

IN Illinois it is believed that undue delays in meeting this problem may result in the withholding of gas reserves to the interstate pipelines, or the sale of this gas to local industry in intrastate commerce in the producing states, or the just plain discouragement of exploration for new sources of supply. It is not my task to defend the Federal Power Commission for I believe that body quite capable of handling its own problems. It is quite easy to sit on the outside and criticize but much more difficult when that same person is confronted with the task of doing. Regulators in Illinois, while not always in agreement with the FPC orders, recognize the enormity of the task it has before it.

Much of the work load is due to the recent court decisions. The decisions have placed more and more responsibilities upon the commission. The courts have outlined what ground rules they expect to be met and have left it up to the commission to formulate procedure in accordance with the decisions.

When one stops and realizes that the Phillips decision alone has probably increased the work load of the commission by a hundredfold, one must know the magnitude of the task confronting it. Do not forget the limitations placed upon it by budget restrictions. To find capable help is difficult, but not to be able to keep pace with the salary brackets is the real stumbling block. I know—I have the same

problems with my own staff. I believe that only through well-thought-out orders can a workable procedure and solution be established.

This necessarily takes time. I, for one, advocate giving the commission any and all aid it needs and in the meantime not impair its progress with critical innuendoes or direct charges without constructive solutions.

THE gas industry's future rides on the FPC's action in this particular matter. Maybe helping hands rather than roadblocks are in order. Wisdom rather than criticism.

Another important thing to remember is that to shake public confidence in a body charged with the task of regulating your industry may well adversely affect the gas industry's standing in the money market.

Essentially, the first commandment of the Natural Gas Act is that the commission act to get gas to the public where the commodity is needed. This I think the Illinois commission has done as expeditiously as possible when one considers the whole picture in perspective. I would much rather have a commission that endeavors to do a job than one that cloisters and insulates itself for fear of public criticism.

The commission's main concern as a regulatory body is to assure any adequate supply of this remarkable fuel at fair and reasonable rate levels, and, in turn, adequate service to all the public in Illinois who may desire it. I am quite sure that a penny or two in the price per Mcf of gas to the distributing companies should not act as a deterrent in the solution of this all-important problem product.

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Rate of Return

Problems

THE question of rate of return poses a troublesome problem today in the gas industry. With the cost of money at almost an all-time high, it is thinkable that regulatory bodies should take a reappraisal of that all important factor of utility life; namely, rate of return. I read with considerable fright the other day that New England Telephone and Telegraph paid 5.72 per cent for \$45 million of debenture capital at a 5.75 per cent coupon, the highest ever for the company and the highest in the Bell system since 1923. Compare this rate to a borrowing by the same company in April of 1958 when it sold \$45 million debentures at an interest cost of 3.88 per cent for 4's.

Cost of Money and Inflation

IT seems to me that the government in its attempt to ward off further inflation by its apparent policy of the prime rate for money at 5 per cent or better may well be starting an inflation in an entirely different way. Companies that are expanding and need additional capital to finance the plant additions, and companies that are confronted with impending refinancing due to imminent maturities of debt capital, will in many instances be confronted in the money market with cost of money at almost, if not double, the cost of prior debt. For these companies the regulatory bodies should look with favor upon a reappraisal of the factor that this new cost of debt capital bears to the rate of return.

The companies that are not going through any appreciable expansion at this time and companies that have no immediate debt maturities, or both of these elements, should not rush in to the regulatory body and cry wolf until the need for such action is apparent. Increased rates cannot be justified solely because interest rates have gone up. Increases in property values due to inflation or the lowering value of the dollar are given effect through the "fair value" rate base and not through the rate of return, and it is only the latter that I am talking about. Consequently, with different utilities in varying stages of expansions and debt maturities the commissions may, in considering these variables, end up with considerable spreads in the rates of return.

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Interest-free Money and Expansion

THIS also, to a great extent, re-emphasizes my previous point on the treatment to be accorded accelerated depreciation. By using the funds that are generated from accelerated depreciation the company does not need nearly as much outside capital for expansion as a company required to use the "flow through" treatment on accelerated depreciation. The Illinois commission has firmly felt for several years that the public is benefited by this interest-free money for plant expansion. The present high interest costs exemplify the benefit that this policy provides.

In connection with the high cost of

capital funds, I should like to add that it appears somewhat ridiculous for the government, which is now having to pay 4 to 5 per cent for its money, to loan money to the electric co-operatives at 2 per cent. If privately owned utilities are forced to pay 5 to 6 per cent for their money, and also to bear the tax burdens which co-operatives escape, the rates which privately owned utilities such as gas, electric, and telephone will have to charge for their service may well bring on the public clamor for government or public ownership. The goose that has been laying considerable tax eggs may well be killed by the fox that has been eating up a considerable number of these same tax eggs.

"EXPENDITURE rises to meet income. Parkinson's Second Law, like the first, is a matter of everyday experience, manifest as soon as it is stated, as obvious as it is simple.

"When the individual has a rise in salary, he and his wife decide how the additional income is to be spent: so much on insurance, so much to savings bank. They might just as well save themselves the trouble, because no surplus ever comes into view. The extra salary is silently absorbed, leaving the family barely in credit and often, in fact, with a deficit which has actually increased. Individual expenditure not only rises to meet income but tends to surpass it.

"What is true of individuals is also true of governments. Whatever the revenue may be, there will always be the pressing need to spend it. But between governments and individuals there is this vital difference: The government rarely pauses even to consider what its income is. Were any of us to adopt the methods of public finance in our private affairs, we should ignore the total of our income and consider only what we should like to spend. We might decide on a second car, a country place in the Catskills, and a long holiday in Bermuda. All these, we should tell each other, are essential. It would remain only to adjust our income to cover these bare necessities."

—C. NORTHCOTE PARKINSON,
British historian and humorist.

Some Neglected Aspects of the St. Lawrence Seaway

The St. Lawrence seaway increased in cost about 64 per cent between 1952 and 1958 and annual charges for operation, interest, and amortization increased from an estimated \$14.6 million in 1952 to \$28 million in 1958, a boost of 92 per cent. Consequent increase in tolls has somewhat reduced the cost advantage the seaway enjoyed over other transportation routes. When some of the present problems of the seaway are resolved, traffic will pick up. But it remains to be seen whether it will reach the potential estimated.



By

ROBERT W. HARBESON*

THE opening of the St. Lawrence seaway during the last year has been accompanied by a great deal of speculation concerning the prospective volume of traffic which will move over this route, the extent to which individual Great Lakes and St. Lawrence river cities will share in this traffic, and the benefits which will accrue to various economic groups, particularly agricultural interests, by reason of lower transportation charges via the seaway. It is not my purpose to add to the abundant speculation concerning these matters but to focus attention primarily on certain financial and other considerations relating to the seaway which have been relatively neglected in public discussion of the project.

*Professor of economics, College of Commerce & Business Administration, University of Illinois, Urbana, Illinois. For additional personal note, see "Pages with the Editors."

At the outset three points should be noted with respect to the seaway. First, it does not constitute a new water route but an improvement of an existing route which permits the use of larger and more economical vessels. There has been regularly scheduled steamship service between Chicago and European ports since 1931, and in 1955 (the most recent year for which statistics were available to the writer) traffic on the St. Lawrence canals totaled almost 11.5 million net tons, of which more than 750,000 tons represented direct shipments from American and Canadian ports to overseas destinations.

HOWEVER, prior to the opening of the new facilities, the size of vessels moving between Montreal and Lake Ontario was severely restricted by the dimensions of the locks and canals bypass-

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ing the rapids of the St. Lawrence river. There were 22 locks with controlling dimensions of 270 feet length, 43 feet 8 inches width, and 14 feet depth. These have been replaced by seven locks, each 800 feet long, 80 feet wide, and 30 feet deep, and by channels with a minimum depth of 27 feet. Ocean-going general cargo vessels using the old canals could carry only 1,500 or 1,600 long tons and lake-type bulk carriers only 2,500 to 2,800 long tons.

The new facilities will accommodate ocean-going general cargo vessels with a capacity of 8,500 to 9,000 long tons, lake-type bulk carriers with a capacity of 20,000 to 25,000 long tons, and dual-purpose lake-ocean bulk carriers with a capacity of 15,000 long tons. In addition to accommodating larger vessels the new locks will appreciably reduce the time required for passage, with a consequent saving in vessel operating costs. It was not necessary to enlarge the locks in the Welland Canal, since these have the same dimensions as the new seaway locks, but it was necessary to increase the depth of the canal from 25 to 27 feet. The situation with respect to the locks and channels at Sault Ste. Marie was the same as in the case of the Welland Canal.

Seaway Has Other Functions

SECOND, it should be recalled that the seaway is not solely a navigation facility but part of a dual-purpose navigation and hydroelectric power project. The power phase of the project was undertaken by the Power Authority of the State of New York and the Hydro-Electric Power Commission of Ontario in connection with the construction of the seaway, and dams and certain other facilities

were constructed in the St. Lawrence river which serve jointly the purposes of navigation and power production. The cost of the power phase of the project has been estimated at \$600 million. The significance of the dual-purpose character of the project will be indicated below.

THIRD, it should be emphasized that, in a sense, the completion of the enlarged St. Lawrence locks and channels does not represent the completion of the seaway. In order to make these new facilities fully effective it will be necessary to deepen to 27 feet the connecting channels between Lake Erie and Lake Huron and between Lake Huron and Lake Superior, as well as a number of major harbors, and to provide enlarged harbor terminal facilities. The deepening of the connecting channels is currently in progress at an estimated cost of \$146 million and, subject to the availability of funds, may be completed in 1962.

The pending Rivers and Harbors legislation of 1959 calls for the expenditure of about \$64.5 million for deepening 16 Great Lakes harbors, and further substantial expenditures for this purpose may be expected. The president of the Great Lakes-St. Lawrence Association estimates that municipal, county, and state governments have spent \$50 million for harbor terminal facilities at Chicago, Duluth, and Cleveland and that \$100 million more may be spent for this purpose during the next five or ten years. Finally, there has been considerable debate as to whether it will be necessary to enlarge the Welland Canal if traffic grows to the level adopted as a basis for determining the present schedule of tolls; if enlargement should prove to be necessary the cost of twinning

SOME NEGLECTED ASPECTS OF THE ST. LAWRENCE SEAWAY

the five single locks in the canal has been estimated at \$125 to \$150 million at 1956 prices.

Seaway Development Corporation

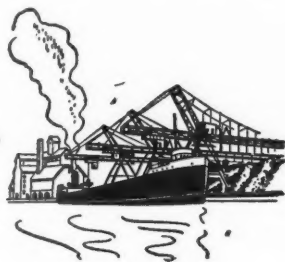
THE Wiley-Dondero Act of 1954, which authorized American participation in the St. Lawrence seaway project, provides for the creation of the St. Lawrence Seaway Development Corporation, which, in co-operation with the St. Lawrence Seaway Authority of Canada, is made responsible for the construction, operation, and financing of the navigation project. The American share of the cost of these facilities is to be financed by the sale to the U. S. Treasury of revenue bonds in an amount not exceeding \$140 million. The law also provides that the

cost of constructing and maintaining the project is to be paid by shipping tolls rather than met by general taxation.

The Seaway Development Corporation is directed, in co-operation with the Canadian Seaway Authority, to establish tolls sufficient to cover the cost of operation and maintenance, including depreciation and payments in lieu of taxes, interest on the outstanding obligations of the corporation, and amortization of the principal of such obligations over a period of not to exceed fifty years. Subject to the foregoing requirement, the corporation is directed to establish tolls which will encourage increased utilization of the waterway and which will take account of "the special character of bulk agricultural, mineral, and other raw materials."

Tolls Count Most on Bulk Cargo

ACCORDINGLY, tolls for the complete passage from Montreal to Lake Erie have been fixed at six cents per gross registered ton of the vessel plus 42 cents per ton of bulk cargo and 95 cents per ton of general cargo carried. For transit of the Welland Canal only the toll is two cents per gross registered ton of the vessel, two cents per ton of bulk cargo, and five cents per ton of general cargo carried. Commercial vessels carrying passengers will be charged 50 cents per passenger for each lock transited. These tolls are based on the assumption that 88 to 90 per cent of the traffic will be bulk cargo, and that by 1968 traffic through the Welland Canal will reach 60 million tons, and through the St. Lawrence canals 50 million tons, and will remain on that level thereafter.



PUBLIC UTILITIES FORTNIGHTLY

It is expected that the St. Lawrence river portion of the project will not be financially self-sustaining until 1963 and the Welland Canal portion until 1964, but that revenues thereafter will be sufficient both to meet current requirements and to make good the deficiency expected in the initial period. The tolls are to be divided between Canada and the United States in proportion to the annual charges for operation, interest, and amortization incurred by each of the two countries; initially the division will be 71 per cent to Canada and 29 per cent to the United States.

Financial Facts of Seaway

WITH the foregoing facts in mind we are in a position to analyze some significant financial aspects of the seaway project.

The first point to note in this connection is that the cost of the project has greatly exceeded the original estimates.

The accompanying table shows that the estimated cost of the project has increased from about \$287 million in 1952 to \$471 million in 1958, an increase of over 64 per cent. Annual charges for operation, interest, and amortization have increased from an estimated \$14.6 million in 1952 to \$28 million in 1958, an increase of about 92 per cent. The increase in construction costs has been attributed to unexpected construction difficulties, the addition of features not originally contemplated, and inflation. For example, the cost of deepening the Welland Canal increased from an estimated \$2 million in 1952 to \$29 million in 1958 because of striking unexpected rock formations.

On the other hand, outlays were reduced by deferring construction of the Point Rockaway Canal and lock, which would have cost an estimated \$21,259,000.



ORIGINAL AND PRESENT ESTIMATED COST AND CARRYING CHARGES
OF ST. LAWRENCE SEAWAY, MONTREAL TO LAKE ERIE
Capital Outlay (Millions)

	1952			1958		
	Canada	United States	Total	Canada	United States	Total
Cost of Construction	\$175.0	\$ 88.0	\$263.0	\$322.5	\$124.0	\$446.5
Interest during Construction	15.7	7.9	23.6	17.5	7.0	24.5
Total	190.7	95.9	286.6	340.0	131.0	471.0
<i>Carrying Charges (Millions)</i>						
	1952			1958		
	Canada	United States	Total	Canada	United States	Total
Operation and Maintenance	\$ 2.0	\$ 1.5	\$ 3.5	\$ 4.4	\$ 1.4	\$ 5.8
Interest				9.6	3.2	12.8
Amortization of Capital } Cost on 50-year Basis }	7.4	3.7	11.1	6.8	2.6	9.4
Total	9.4	5.2	14.6	20.8	7.2	28.0

Sources: 1952 data from St. Lawrence seaway, hearings on S 589 and amendments, Subcommittee of Committee on Foreign Relations, U. S. Senate, 83rd Congress, 1st Session (1953), p. 46; 1958 data from St. Lawrence Seaway Development Corporation, Announcement of Recommendations for Measurement Rules and Toll Rates on the St. Lawrence Seaway (June 18, 1958), pp. 3, 4.

SOME NEGLECTED ASPECTS OF THE ST. LAWRENCE SEAWAY

Cost Advantage of Seaway Lessened

The effect of the very great increase in annual charges, and consequently in the necessary level of tolls, is to reduce somewhat the cost advantage of shipping via the seaway as compared with other routes. It is true that the rates of rail, motor, and overseas water carriers have also increased during this period but the increases have been much less than the increase in seaway annual charges. For example, by comparison with the 92 per cent increase in the latter, general railroad rate increases granted by the Interstate Commerce Commission during the period April, 1952, to September, 1958, totaled 24.2 per cent, and the actual increase in the rate level was materially less than this amount by reason of "hold downs" and competitive reductions in individual rates.

ANOTHER point to note is that despite the legal requirement that seaway costs be financed by tolls, a substantial part of the cost of shipping via the seaway will be borne by others than the shippers. In the first place, as noted above, the St. Lawrence river improvements include some important facilities which serve jointly the purposes of navigation and hydroelectric power production and the entire cost of these dual-purpose facilities has been allocated to the latter function. The result is to make the navigation investment, which is used as a basis for establishing tolls, \$120 million less than it would have been had the original proposal to divide the cost of the joint-purpose facilities between navigation and power been adopted. Thus a portion of the navigation costs will be borne not by shippers but by power users in New York and Ontario.

In the second place, the very substantial cost of providing and maintaining harbors and connecting channels of sufficient depth for seaway vessels will continue to be borne by the taxpayers. However, since these improvements will be used for intralake and interlake move-

ments, as well as by seaway vessels, only a proportionate share of the cost is chargeable to the latter. Seaway traffic should not, of course, be charged with any part of the cost of harbor improvements at smaller ports not used by seaway vessels.

Third, the seaway tolls are designed to cover only the operating and maintenance costs of the Welland Canal plus interest and amortization on the outlay incurred for deepening the canal from 25 to 27 feet. Interest and amortization on the very large pre-existing investment in the canal will continue to be borne by Canadian taxpayers. Finally, American steamship lines operating from Great Lakes ports to overseas destinations on routes designated by the Federal Maritime Administration are eligible for ship construction and operating subsidies, with a consequent additional burden of indeterminate size on the taxpayers.

Will Seaway Traffic Be Enough?

IN addition to the foregoing known financial obligations connected with the seaway both taxpayers and shippers have certain contingent obligations. Taxpayers

PUBLIC UTILITIES FORTNIGHTLY

Taxpayers May Have to Foot Bill

IT is pertinent to note in this connection that according to the most recent estimates the volume of traffic through the St. Lawrence canals during the current season will not exceed 20 million tons, as compared with the figure of 25 million tons used as a basis for establishing tolls. The resulting deficiency in actual as compared with estimated toll revenue will be around \$3 million. It should also be added that taxpayers will be subject to additional burdens if it should prove to be not economically possible or politically feasible to make publicly provided terminal facilities self-supporting.



will be subject to additional burdens if the future volume of traffic proves to be substantially below present estimates and if it should prove to be not economically possible or politically feasible to increase toll revenue to a self-sustaining level. Even if such an increase in toll revenue were possible, the result might be a further reduction in traffic volume and greater excess capacity in seaway facilities.

Under these circumstances a conflict would arise between the requirement in the seaway enabling legislation which calls for tolls sufficient to keep the project self-sustaining, and the provision which directs that toll rates "give due consideration to encouragement of increased utilization of the navigation facilities and to the special character of bulk agricultural, mineral, and other raw materials."

LIKEWISE shippers will be subject to additional burdens if tolls, and hence rates, are increased either because of the situation just mentioned or because it becomes necessary to enlarge the Welland Canal, with a consequent increase in an-

nual carrying charges. These contingent burdens on shippers are in addition, of course, to possible increases in vessel operating costs. As an example of the latter, a measure recently introduced into Congress would require employment of a lake pilot on all ocean-going vessels not only in restricted channels but also in the open lakes. This measure, which is strongly opposed by Canada and by foreign vessel operators, would add an estimated \$3,000 to \$4,000 to the cost of each voyage.

ANOTHER example is the unusual number of vessel accidents on the Great Lakes during the current season. The U. S. Coast Guard reports that as of August 15th there were 77 accidents, each involving damage of \$1,500 or more as compared with 44 during the entire 1958 season.

While this is doubtless a temporary situation in considerable measure, arising from inexperience of ocean-going vessel crews and unusual traffic congestion, increases in marine insurance rates are nevertheless being considered.

SOME NEGLECTED ASPECTS OF THE ST. LAWRENCE SEAWAY

Seaway Traffic Limitations

WHILE, as indicated at the outset, it is not my purpose to add to the existing forecasts of the volume of traffic which may be expected to move over the seaway, we may properly conclude with a brief review of some of the major factors which impose upper limits upon such forecasts. One obvious limitation arises from the fact that the seaway is icebound for four months or more each year. In addition to reducing the total volume of traffic which can be handled, this circumstance may adversely affect the growth of traffic by making it necessary for many shippers to maintain duplicate facilities and personnel at lake and ocean ports in order to maintain year-around service. There is also the handicap of the congestion and delays accompanying the rush of traffic at the beginning and end of the navigation season.

A SECOND possible limitation is the capacity of the Welland Canal. Whether the canal will be adequate to handle the estimated volume of traffic depends upon which of the available estimates of capacity proves to be most nearly correct. The estimates vary considerably, depending upon the assumptions made concerning the average number of tons of cargo per vessel and the number of possible lockages per season, the latter in turn depending upon the length of the season, delays due to breakdowns and weather, the directional balance of traffic, and the closeness of vessel scheduling.

There is some agreement that the maximum practicable number of lockages per season is about 5,770. Using this figure it would be necessary for vessels to average about 10,400 short tons (9,300 long tons)

of cargo each in order to handle the estimated 60 million short tons which are expected to move through the canal beginning in 1968. There can be no certainty that the average load will reach this figure, although it would be possible for it to do so as the small lake and ocean vessels designed to utilize the old St. Lawrence canals are replaced with larger and more economical vessels. In any event, it seems probable that the estimated volume of traffic could be handled only with close scheduling of vessels and the likelihood of delays. It has recently been announced that Canada will spend \$7.5 million to provide additional tie-up space, which, by permitting closer scheduling of vessels, will allegedly increase the capacity of the canal by as much as 25 per cent. Should congestion become serious it would be possible, as indicated earlier, to twin the five single locks, though at heavy expense.

THIRD, the extent to which use of the seaway by ocean-going vessels will be restricted by the 27-foot channel has likewise been the subject of considerable debate. Available studies indicate that vessels of 24½ to 25 feet salt water draft can use the seaway without restriction; vessels of up to 26½ feet salt water draft can do so by reducing fuel, fresh water, and stores to a minimum, and, in some instances, by slightly reducing loads.¹ Data submitted at the hearings on seaway legislation in 1953 covering all ocean-going vessels over 1,000 tons (ex-

¹ It is necessary to allow a minimum of 1½ to 2 feet clearance below the keel and to make allowance for the fact that vessels have a slightly deeper draft in fresh water than in salt water; the difference for a vessel of 8,000 dead-weight tons is about six inches.

PUBLIC UTILITIES FORTNIGHTLY

cept those used by the military and special types such as tugs, yachts, and cable ships) show that 59 per cent of the foreign-flag vessels have salt water drafts under 25½ feet and 66 per cent have drafts under 26½ feet, but the corresponding figures for American-flag vessels are only 13 and 17 per cent.

It is therefore clear that a large proportion of foreign-flag vessels but only a very small proportion of American-flag vessels can use the seaway at full, or nearly full, draft. Larger vessels with drafts of 26½ to 28½ feet will be able to use the seaway provided they operate with substantially reduced loads, and the data just referred to show that 60 per cent of American-flag vessels are in this category. What is uncertain is the extent to which such vessels will find it profitable to use the seaway; that they may do so under some circumstances is suggested by the results of a study by the Army Engineers which showed that over 70 per cent of the American-flag vessels entering and leaving the port of New York in overseas trade during 1952 operated at drafts of 25 feet or less. There is also some prospect that new vessels will be built specifically for subsidized American-flag services between the Great Lakes and overseas destinations.

THE extent to which the important grain export traffic will be handled in direct movements by ocean-going vessels, as contrasted with movement in large lake bulk carriers to lower St. Lawrence ports for transshipment to smaller ocean vessels, is somewhat uncertain. During the period May through September, 1959, approximately 77 per cent of the American grain exported via the sea-

way was handled in direct movements. Several dual-purpose lake-ocean bulk carriers have been built which are capable of carrying 15,000 tons at seaway draft, and if vessels of this type should prove to be economical, the effect may be to increase the volume of direct grain movements.

A recent U. S. Department of Agriculture study estimates that a saving of about three cents per bushel would be realized by using such vessels with 15,000-ton loads on the seaway and adding cargo to full ocean draft at Montreal, as compared with movement in a lake carrier with a capacity of 16,700 tons and transshipment at Montreal to a Liberty vessel with a capacity of 9,500 tons. On the other hand, the transshipment trade may be stimulated by the development of grain storage facilities on the ice-free portion of the St. Lawrence river, whence shipments could be made overseas throughout the year.

An 11.5 million bushel storage facility designed to serve this purpose is nearing completion at Baie Comeau, Quebec, and the construction of additional facilities of the same type is contemplated. There is general agreement that no substantial traffic movement between American Great Lakes and Atlantic seaboard ports will develop. This trade is not eligible for subsidies and is restricted by law to American-flag vessels; the cost of operating the latter at seaway draft would be such as to be noncompetitive with alternative methods of shipment.

International Trade Policy

A FOURTH factor which creates uncertainty with regard to the traffic potential of the seaway is the future course

SOME NEGLECTED ASPECTS OF THE ST. LAWRENCE SEAWAY

of international trade policy. A reduction in transportation cost such as is made possible by the seaway is equivalent in effect to a reduction of tariffs, and in a world where international trade barriers of various magnitudes are universal, such a development could result in counter-measures which might cancel the saving in transportation cost. For example, many American manufacturers are experiencing increasing difficulty in meeting foreign competition by reason of the trend of domestic as compared with foreign costs; may not there be an insistent demand for increased protection on the part of these interests when their competitive position is made still more difficult by reason of the reduced cost of imports shipped via the seaway?

Will the advantage of lower transportation costs to American exporters using

the seaway be neutralized by a policy on the part of European countries of maintaining or increasing tariff barriers against American goods while reducing tariff barriers within and between the so-called common market and "Outer Seven" trade areas? Or will the reduction in trade barriers within and between these trade areas eventually be extended to the United States also, with a consequent beneficial effect upon the volume of American-European trade? The trend of events in this area cannot be confidently predicted at this time.

THE only comprehensive studies of the saving in cost made possible by the seaway, so far as the writer is aware, are those which have been made by Professor J. R. Hartley of Indiana University and R. C. Haldeman of the U. S. Department



How Much Saving Uncertain

FINALLY, there is considerable uncertainty with regard to the magnitude of the most fundamental factor affecting the traffic potential of the seaway; namely, the saving in transportation cost which it makes possible as compared with alternative routes. This is true even if comparisons are confined to cost borne by shippers, disregarding the substantial part of the total cost which, as noted above, has been or may be shifted to others than the shippers.

PUBLIC UTILITIES FORTNIGHTLY

of Agriculture, both of which relate to the grain trade. The authors estimate that the seaway will make possible maximum savings of 15 to 20 cents per bushel of grain, depending upon the interior points and foreign destinations which are chosen for comparison. These estimates necessarily rest upon a number of assumptions with regard to such matters as the cost of movement from inland origins to ports, the size of cargoes, and the size and type of vessel used for overseas movement, and there is room for difference of opinion concerning their accuracy and representativeness.

Agricultural Benefits Magnified

IN this connection it should be pointed out that the overall benefits of the seaway to American staple crop agriculture have been greatly exaggerated. To the extent that the prices of export crops, such as wheat and corn, are supported at levels above those prevailing in the world market, the saving in transportation cost made possible by the seaway will simply reduce the cost of the government subsidy and will not increase the overall returns to the farmers.² The reduction in the cost of the government subsidy will at least partly offset the other actual and contingent burdens, previously referred to, which the seaway will impose upon the taxpayers.

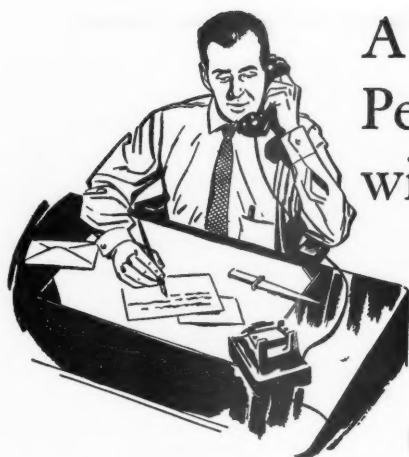
Shippers located at Great Lakes ports, in addition to realizing a saving in rates, may also realize important savings in the cost of packing and in loss and damage

arising from handling or pilferage by being able to ship direct rather than to the seaboard for transshipment. Direct shipment will also make possible faster processing of the financial documents covering export transactions and consequently will make it possible for exporters to receive quicker payment for their goods. It is also likely that the seaway will benefit shippers by bringing about reductions in rates on competing routes to Atlantic and Gulf ports, but this will be a net saving only to the extent that it does not result in higher rates on noncompetitive traffic.

ON the other hand, as previously noted, the fact that the seaway is icebound for four or more months each year may handicap traffic growth by making it necessary for many shippers to maintain duplicate facilities and personnel at Great Lakes and seaboard ports in order to provide year-around service. For some time, also, seaboard ports will have an advantage over Great Lakes ports by being able to offer a greater concentration of financial, brokerage, forwarding, and similar facilities, as well as more frequent sailings to a greater number of destinations.

While there can be little doubt that traffic over the St. Lawrence seaway will grow to substantial proportions and that important savings in transportation costs will be realized, the foregoing considerations suggest that the traffic potential of the seaway is more uncertain, and the saving in transportation cost both smaller and more uncertain than is commonly supposed.

² It is possible that farmers in particular areas might benefit from changes in the domestic rate structure resulting from the opening of the seaway.



A Consumer's Personal Experience with Utility Ownership

By ALFRED M. COOPER*

My experiences may have been duplicated on a lesser or greater scale by others. But something is really wrong when an irrigation power district prices itself out of its rightful market and lets an investor-owned gas distributor take its business. I switched, too, and I am an all-electric-minded utility man. But who could blame me!

IN our community it happens we have no investor-owned electric utility. We do have a privately owned independent telephone company, and we have for years had propane-butane gas service available. This year, it is rumored that regular natural gas mains will be extended to our suburb, after which we shall be afforded a choice between gas in tanks or from mains.

Our independent telephone company has developed within thirty years from a one-horse, manual-type outfit to a completely modernized automatic service, which has for years used Strowger-type equipment. It has always had access to the great Bell Long Lines network, and only last spring put into operation a com-

pletely modern direct distance dialing plant.

The telephone company was founded by a gentleman who continues active as a sort of president emeritus at age eighty-four. His son is the administrative head of the company, a member of our school board, and interested in all manner of civic projects. The company is wholly owned by local investors, and until a year ago there was to be heard considerable grouching about the service, particularly in the matter of securing a residence phone with less than ten parties on a line.

OF late, construction appears to have about caught up to where it is not too difficult to secure a four-party residential phone, and of course all business phones are on private lines.

*Free-lance writer and author, resident in Indio, California.

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Nevertheless, every so often, some group of citizens in our area will demand an investigation of the "terrible phone service," and members of the state utility commission will schedule hearings to determine the validity of a number of service complaints. These hearings have always been well-attended and in themselves appear to furnish an excellent means of calming down honestly irate subscribers who feel they should get a call through occasionally, no matter how many teen-agers have access to the other instruments on their line.

RECENTLY, such complaints seem to have tapered off, perhaps because of the improvement in the general physical service of the telephone company, but also because consumers have learned that a few hour-long conversations can tie up the service on even a four-party line.

The community is proud of its new direct distance dialing facilities, and many of us have even learned how to initiate such a call without fouling up the automatic direct distance dialing equipment and thereafter resorting to the old-fashioned manually operated Long Lines methods.

Having been employed for a time as central office equipment engineer at the Hawthorne Works of Western Electric, and having later lectured to the employees therein on the then newfangled step-by-step system of automatic telephony (after the Bell system had purchased rights to manufacture Strowger equipment for its own exchanges), I have a pretty good idea of what it costs to maintain a dialing system of telephony in these days of rising prices of everything.

Service Improved—Rates Upped

SO I have been happy to see the telephone service in my community slowly improve, and just recently I have been unable to get much exercised on hearing the announcement that the local independent company has requested a rate increase. This attitude has not been shared by a majority of local subscribers, who see nothing wrong in the increase in the cost of almost every other service and commodity dispensed by our local merchants and craftsmen.

Actually, the rate increase requested amounts to \$1 a month for my four-party residential phone, but for a one-party business phone the requested increase is \$6.

Knowing something about telephone maintenance costs, I could not bring myself to complain about that \$1 increase, but local merchants are going to protest the phone company's hike on business phones. Just what the action of the commissioners will be in this instance is anybody's guess, but it is a fact that the population of our community has doubled since 1952, when phone rates were last raised, and presumably the volume of business also has doubled.

All-electric Home Advocate

ALL this time there has existed another situation with regard to utility rates that has been truly vexatious to this particular consumer. That is, I have enjoyed the privilege of living in an all-electric home for a number of years, and having spent most of my life as an employee of publicly or privately owned electric utility organizations, I have always talked up the all-electric home as the acme of economical, efficient utility service.

A CONSUMER'S PERSONAL EXPERIENCE WITH UTILITY OWNERSHIP

The electricity furnished to this area (which embraces most of two of the largest counties in the United States) is supplied by a governmental irrigation district organization as a by-product of its primary function of furnishing irrigation water for several million acres of the most valuable farm land in the world—land which would be worth next to nothing if deprived of this precious water.

Being a governmental agency, the property of this district is, of course, tax-exempt. Since I am not a user of its water (our community has its own water system), I have it only as hearsay that the farmers of the area are unhappy with the rates charged for irrigation water, due to alleged overmanning of the district's employee payroll, and also because of the power exerted by the district in political matters. Scores of lawsuits directed by farmers against the district on a wide number of charges have been unsuccessful.

Electric Bills Skyrocket

My only personal interest in the matter is in the monthly bills for irrigation district electricity. These were quite high several years ago; today they are little short of astronomical. Time was when my midwinter bills averaged around

\$25 a month. Now, although we have added no extra load, these are closer to \$45 monthly, and appear to increase year by year. During all this period I have read or heard of no hearings for increased electric rates requested by this irrigation district.

The worst feature, however, is the fact that despite the larger bills, we never appear to be able to keep our house warm during the chillier months. The dwelling is equipped with the standard wall units in every room, and since our winters are fairly mild, these suffice until it gets really cold—in this region, 16 above zero is cold weather. As a result, although we pay the highest electric bills of any area within our state, we simply cannot be comfortable in December, January, and February.

Switch to Gas Heating

ALL residences in this area at one time received all-electric service. Now, however, most of these have big butane gas tanks in their yards. These homes now are really warm, their electric bills have been quartered, while their bills for liquid gas are negligible. As newer residences are built, invariably the all-electric idea has been abandoned, and the tendency appears to be to adopt not only gas

Why I Am All-electric

BEING stubborn, I have stuck to the all-electric idea even while I bemoaned the lack of proper heating in winter. After all, I once trained electric appliance salesmen in a large city and sold scores of them on the blessings of the all-electric home. I remember (this was perhaps twenty-five years ago) that we furnished each salesman with a photograph of an apartment building in which a section of the walls had been blown out by the explosion of a gas refrigerator. I never knew where the photo came from, but it was sufficiently frightening to cause thousands of people to switch over to electric refrigerators.

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heat, but gas refrigerators, gas ranges, and gas water heating.

Butane or propane gas is at present available in our area for 21 cents a gallon in tanks holding 150 gallons. Or it may be paid for on a meter basis.

However, the natural gas people are gradually extending their network of mains into the smaller communities hereabouts, and just recently their management has completed a survey of our area. All property owners but three signed up for the natural gas service, and these three were absentee owners who could not be reached at the moment.

No publicity or promotion has been given to the natural gas idea, but word of mouth from the neighboring communities now served with natural gas has been sufficient. Thus a family, friends of ours, living ten miles distant, uses gas for everything, including gas icebox and of course gas for cooking and heating. Their monthly bills for gas run about \$5.75 in summer and in winter total \$8 to \$10.

Gas-electric Comparison

THESE same people are paying between \$9 and \$14 for electricity, which they use only for lighting, television, and small appliances. That is, their electricity for minor purposes costs more than does their natural gas for such heavy services as panel-ray gas heating in every room, operating under thermostatic control, range operation, water heating, and refrigeration.

However, air conditioning is a must in this area between April and mid-October, and here again the irrigation district gets in some good licks. So long as these folk stayed with the old-fashioned desert coolers they paid but \$8 to \$10 for air condi-

tioning. But now "refrigerated" conditioners, set in windows or in unit models, have become fashionable, and for these they must pay the irrigation district at least \$30 a month for electricity.

Since these newfangled cooling appliances have become popular, the bills of the all-electric home owners average around \$45 a month the year around. For as soon as air conditioning is no longer required, electric heating becomes essential. And the consumer who attempts to conserve on irrigation district current must freeze in winter and really roast in summer.

I Succumb to Gas, Too!

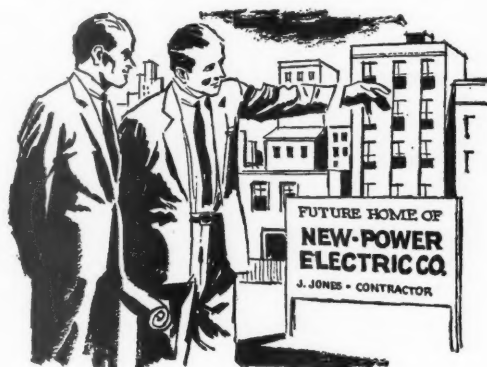
OF course, all the smart people in the area are using natural gas as fast as it becomes available, for every possible service, and as little electricity as possible. Even I, who worked for decades in electric power companies and bureaus, have signed up for natural gas furnished by a private corporation. And so long as I stay with the old-fashioned desert cooler air conditioning, I will thus save two-thirds of my utility bills each month. I will also be warm in winter and as cool as ever in summer.

Also, so long as I have to deal with this tax-exempt irrigation district, I will never install electric "refrigerated" air conditioning.

However, only recently I saw an ad in a magazine of a complete "refrigeration" air-conditioning appliance that doubled as a central heating device in winter. And the gadget apparently works on gas alone! Knowing that it takes a lot of gas to heat a house properly, and that the cost for all this gas is very low, it may just be that the gas people have hit on an equally economi-

A CONSUMER'S PERSONAL EXPERIENCE WITH UTILITY OWNERSHIP

Hopes for Investor-owned Atomic Power Company



BUT these (atomic) plants probably will be operated by tax-paying, investor-owned power companies. Otherwise, regardless of operating costs, the consumer may find himself in my predicament—stuck for larger and yet larger electric bills. It simply costs more money to operate an overstaffed governmental bureau that it does to finance a well-managed private corporation. And there also may exist those hidden, added costs that make the bills of the consumer of the governmental power bureau bigger and bigger, no matter how much costs of generation and distribution may be cut by the most amazing technological developments.

cal method of refrigerated conditioning. If this proves to be true, then, despite those scare photos we furnished our salesmen, I am going over to gas in a big way.

I suppose I shall have to stick to electric lighting, and I have never seen a gas-operated television set. But this publicly owned irrigation district can charge but a few dollars for electricity for these services.

Also, I am not going to protest the rate increases of our privately owned telephone company. My telephone is worth \$5.50 a month to me.

Forecasts of Cheap Electric Power

THOSE of us who are old enough can remember when we were told that

"cheap electric power" must result from the construction of government-owned hydroelectric plants. Now we find a great industrial city such as Los Angeles converting as swiftly as possible to steam power plants, in the sure knowledge that Lake Mead, on the Colorado river, will be completely silted up within less than twenty-five years. As a mud flat, this reservoir behind Hoover dam cannot thereafter store reserve water for Los Angeles power, and the steam plants must carry the load.

It will be interesting to see whether these plants use gas or oil under their boilers. Coal appears to be becoming less favored for this purpose, particularly in areas which must fight excessive smog.

PUBLIC UTILITIES FORTNIGHTLY

Atomic power plants now loom as the latest answer to cheap generation of electricity. With the need for 300-mile-long transmission lines, in duplicate or triplicate, eliminated, atomic plants should prove a great blessing.

Still Electric Minded

ODDLY enough, I continue to favor the idea of the all-electric home. Certainly there can be nothing cleaner or more convenient than electric heating and cooking—or refrigerated air conditioning for that matter.

And I can see no reason why electricity, produced and distributed under the natural competitive conditions of private enterprise, cannot compete successfully with gas in any utilitarian field.

But so long as the choice is between the exorbitant prices charged for government-produced electricity and the far lower rates asked for privately owned gas, I have no choice. A consumer would have to be a rabid advocate of government ownership of everything to pay three or four times as much for such electric utilities as he must pay, in my community, for the gas utility service.

It also strikes this consumer as odd that the very argument that has always been used for building federal public power projects (that it costs nothing to utilize the power of falling water to generate electricity) applies with equal force in connection with the utilization of natural gas.

In each instance, nature has produced the water and the gas. Then, what the residential consumer must pay for is the transportation of either form of energy from its source to his home.

THE high-priced electricity I am using is generated about 150 miles distant, from Colorado river water. The low-priced natural gas I am going to use is transported about 1,500 miles, from somewhere in central Texas.

On the face of it, any differential in rates should favor the Colorado river electricity.

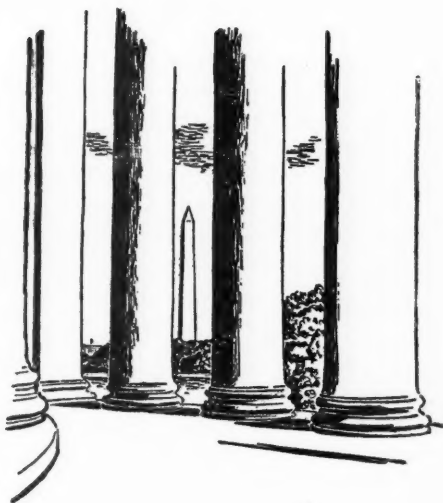
Should this ever become the case, I shall gladly shift back to all-electric service. In the meantime, my home will be converted from all-electric to as nearly all-gas as practicable.

"... most thoughtful Americans have come to this conclusion: If individual prices and movements of capital and labor are flexible, as a result of adequate competition in open markets and an absence of governmental interference with farm and other prices, then the real growth of the United States' economy is fostered by a dollar of stable value. Even a gradual inflation of the price level, once it becomes generally expected, impedes real growth. It results in lessened saving, misdirected investment, speculation, looser management, and lower productivity. When people expect long-run stability in the price level, their behavior promotes the growth of production."

—NEIL H. JACOBY,

Dean, University of California at Los Angeles,
Graduate School of Business.

Washington and the Utilities



Oil and Gas Watching Coal

THE ease with which the House Interior Committee approved legislation designed to set up a research program "to stimulate the production and conservation of coal" has put the oil and gas industries' representatives in Washington definitely on edge. Ostensibly, this bill (HR 3375) is designed to pep up the coal industry, which has been steadily declining in recent years.

But the rival fuel interests smell something back of this bill, and it is not oil or gas. They feel that the coal interests are trying to persuade the federal government to discourage certain uses of oil and natural gas by direct industrial sale or for boiler fuel for electric utilities, simply in order that the coal industry might have the business instead.

In any event, the idea of legislation even looking in the direction of setting up an eventual federal authority to say who should use what kind of fuel, with or without the protective coloration of conserving irreplaceable natural resources, has long been a bugaboo to the oil and gas people.

Natural gas, of course, is already regulated from the production wellhead to the

consumer's burner tip by the Federal Power Commission under the Natural Gas Act for interstate sales. And because of its inescapable partnership with gas production, the oil industry is likewise already involved to some extent with federal regulation. Coal, on the other hand, is a commodity and not regulated as a public utility or in any other respect except through the safety inspection and advisory capacity of the Bureau of Mines.

THE bill, which could well pass the House and has already been introduced in the Senate by Senator Clark (Democrat, Pennsylvania), seems innocent enough on the surface. It would establish an Office of Coal Research in the Interior Department. It carries a relatively modest appropriation of \$2 million. It would give the Secretary of Interior authority to develop, through research, "new and more efficient methods of mining, preparing, and utilizing coal." This program has been strongly promoted by coal area representatives who feel that it may help in combating the perennial recession in the coal fields.

The House bill would permit the In-

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terior Secretary to contract for research with coal trade associations, coal research organizations, educational institutions, state agencies, and other organizations. A technical advisory committee would be set up to examine and judge the value of research projects. The House bill was considerably scaled down from the original measure, which carried a price tag of \$20 million. It was also amended so as to allow the Secretary to withhold information on research developments from the general public if necessary to national defense. The original bill would have made all research information available to the general public. There has been no word from the White House about its attitude but it seems to be assumed that the President will sign it, if the Congress goes along.

IT was the Sun Oil Company of Philadelphia which last month openly charged the coal industry with trying to use the federal government as an instrument to suppress certain forms of oil and gas business. This was denied by Joseph E. Moody, president of the National Coal Policy Conference. Writing to William K. Whiteford, president of Gulf Oil Company of Pittsburgh, Moody challenged the validity of Gulf advertisements in *The Wall Street Journal* last September, which implied that coal was seeking some special advantage at the expense of other fuels. Moody did object to two marketing practices of the oil and gas industries which he thought were unfairly burdensome to the coal industry: (1) dumping Venezuelan residual fuel oil on the East coast at cheap prices to dissuade electric utility companies and other industries from the use of coal; (2) dumping of cheap natural gas for boiler fuel at prices only a fraction of those paid by a household gas consumer.

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But Moody denied that the coal industry was trying to control a consumer's preference to use whatever fuel he pleases. "It would appear," said Moody, "that neither of the practices to which coal objects are involved in consumer preference. . . . We believe that all of these fuels have their proper place in the market. We believe that, as far as possible, the consumer should have a free choice . . . and there should be free and fair competition among all suppliers."

Despite action by the House Interior Committee, the coal resolution still faces some formidable hurdles in a politically sensitive Congress. Perhaps the biggest hurdle is the duplicate leadership of the Democratic majority by Speaker Rayburn in the House and Majority Leader Lyndon Johnson in the Senate. Neither one is regarded as enthusiastic over bills to advance the interests of the coal industry at the expense of oil and gas or at least that is what oil and gas people think.

No Gas Bill

WHATEVER happens to the coal study resolution, the oil and gas people are not likely to get their way on the perennial move to relieve gas producers from the full jurisdiction of the FPC under the Natural Gas Act. But despite the discouraging outlook, because of which even southwestern Congressmen are not pushing for such a bill, the Independent Petroleum Association is still hopeful. It is still pressing for passage of some kind of gas bill. To disinterested observers, the chances seem pretty hopeless for such legislation, which has twice foundered on presidential vetoes after passing Congress in recent years.

The president of the Independent Petroleum Association, Alvin C. Hope, expressed disappointment that Eisenhower did not recommend a new gas bill in his

WASHINGTON AND THE UTILITIES

Budget Message. Hope has conferred with Representative Harris (Democrat, Arkansas), who has previously sponsored and strongly supported such a measure, but he came away from his last conference without any assurance that Harris was interested in reviving the controversial gas bill.

The opposition has heretofore come mainly from so-called "consumer state" Congressmen (although it is hard to imagine any state which is not a consumer state to some extent). The nucleus of this opposition lies in the Middle West and industrial East—Indiana, Michigan, Wisconsin, Pennsylvania, New York, and Ohio, to name but a few of the important states. Gas for house-heating fuel is heavily utilized in these regions.

King-Thompson Law Survives

ALTHOUGH labor union forces rightly contend that a technicality of the law is responsible for the King-Thompson Act remaining on the Missouri statute books, it seems likely that the controversial legislation will stay around indefinitely. The labor unions had hoped, on the strength of an earlier decision throwing out a Wisconsin antiutility strike law, that the King-Thompson Act would likewise fail in its test of constitutionality. But the U. S. Supreme Court on January 25th declined to rule on the appeal because the strike from which the appeal arose has long since been settled.

Unlike the defunct Wisconsin law which involved a form of compulsory arbitration, the King-Thompson Act provides for state seizure of public utilities in the event of strikes in order to protect the public interest and the continuation of public utility services. The court split six to three on the case. The majority said events which brought the issue to court

have long been settled and any action at this time would be "moot."

The three dissenters maintained that a ruling is necessary and left little doubt that they would declare the law invalid if they had a chance to pass on it. The appeal was brought to the high court by three locals of the Oil, Chemical, and Atomic Workers Union (AFL-CIO), following the strike in 1956 by the locals against the Laclede Gas Company of St. Louis. The Missouri governor at the time invoked the King-Thompson Act when the strikers would not return to work. Later state officials obtained a back-to-work order from the St. Louis circuit court and the strike ended. New contracts with Laclede were signed in August, 1956, and the seizure was lifted October 31st.

The union nevertheless persisted in its appeal because Missouri is still trying to collect fines against the organization for violation of the King-Thompson Law. Justice Potter Stewart, speaking for the majority, said "we cannot agree that the pendency of that litigation gives life to the present appeal." Dissenters Chief Justice Warren and Justices Black and Brennan said "the . . . union and its members stand constantly under threats of penalties and continuing injunctions under the state statute the Missouri supreme court held validly applied in this case."

TVA Developments

THE first public offering of TVA revenue bonds will be made some time after July 1st of this year. President Eisenhower, in his Budget Message, estimated that TVA would require \$115 million for plant expansion in the next fiscal year and this amount includes the proceeds from bond sales. Arnold R. Jones, a member of the TVA board of directors, has estimated that the first issue is ex-

pected to total approximately \$50 million. Congress has given banks approval to enter bids for TVA securities. Previously, such institutions were prohibited from bidding on corporate bond issues. It is anticipated that there will be sharp competition by underwriting groups for this first issue of bonds.

Brooks Hays, Arkansas Democrat, has been named to another nine-year term as a TVA director. He is finishing out the term of Frank J. Welch, Kentucky educator, and is not interested in returning to the House seat from which he was retired following the Little Rock school segregation dispute in 1958.

The appointment of Hays, which is assured of Senate confirmation, would keep the TVA board bipartisan. Board Chairman Herbert D. Vogel and member Arnold R. Jones are both Republicans.

REA Interest Change Unlikely

RURAL ELECTRIFICATION ADMINISTRATION co-operatives feel that House committee alignments are becoming favorable from their points of view. Last month, before a breakfast meeting in Washington, D. C., of a Kentucky REA co-op group, Representative Perkins (Democrat, Kentucky) predicted that the House Agriculture Committee will not approve legislation "harmful" to REA at the present session. About one hundred REA leaders attended the breakfast, which was also addressed by Kentucky's two Republican Senators and four Representatives. Perkins' reference was doubtless to the President's renewed effort to increase REA interest rates above 2 per cent and encourage nongovernment financing of such co-operatives.

Seaton Picks Fuel Executive

INTERIOR Secretary Fred A. Seaton has appointed seventeen oil and gas industry executives to serve as executive reservists with the federal organization which would carry out petroleum and gas functions in a "national emergency." The appointments are part of Interior's program to set up a federal organization, including field offices, on a stand-by basis. While appointments will be made for each of the eight Office of Civilian Defense Mobilization regions, the current list covers only regions two, three, and seven.

The appointees are: Region 2—Paul G. Benedum, Hiawatha Oil & Gas Company, Pittsburgh, Pennsylvania; George C. Caine, Tidewater Oil Company, Delaware City, Delaware; A. S. Chamberlain, Ashland Oil & Refining Company, Ashland, Kentucky; John P. Jones, Standard Oil Company (Ohio), Cleveland; Milan D. King, Ohio Oil Company, Findlay, Ohio; Robert H. Lynch, Atlantic Pipe Line Company, Philadelphia. Also R. D. McGranahan, Gulf Oil Corporation, Pittsburgh; Thomas G. Shirreffs, Standard Oil Company (Ohio), Cleveland.

Region 3—John C. Bolinger, East Tennessee Natural Gas Company, Knoxville, Tennessee; Malcolm E. Grant, Plantation Pipe Line Company, Atlanta, Georgia; A. B. Hannah, Plantation Pipe Line Company, Atlanta; and Charles M. Hunter, Southern Natural Gas Company, Birmingham, Alabama.

Region 7—L. A. Cranson, Honolulu Oil Corporation, San Francisco; David E. Day, Richfield Oil Corporation, Los Angeles; Rollin Eckis, Richfield Oil Corporation, Los Angeles; E. L. Hiatt, Union Oil Company of California, Los Angeles; and Frank D. Lortscher, Signal Oil & Gas Company, Los Angeles.

Telephone and Telegraph



Phone Tax May Be Retained

A FEDERAL-STATE scramble seems to be shaping up to get the benefit of the 10 per cent tax on monthly telephone bills. In the melee the telephone subscriber, together with the industry and telephone labor, may be in danger of double taxation.

Telephone leaders hailed the setting of an expiration date, during the last session of Congress, as a major step in the eventual eradication of the bothersome levy. Under the newly established statutory expiration date the tax is due to go off June 30, 1960, unless Congress should renew it.

It develops, however, that the federal government is not disposed to give up this source of revenue. Some of the states are even jumping the gun to take it over. In some states at least, there is even the possibility that telephone subscribers may end up paying double excise at federal and state levels.

When President Eisenhower presented his Budget Message to Congress he insisted that the nearly \$400 million additional revenue would be needed to balance the budget and produce the anticipated \$4.2 billion surplus for fiscal 1961. The telephone industry, on the other hand, is urging Congress not to extend the unpopular tax, on grounds that it unfairly continues a tax which was imposed as

an emergency during the time of war.

State governors already have begun to note the possibility that the states might benefit from the lucrative telephone excise tax on monthly bills.

New York's Governor Rockefeller has had a personal interview with President Eisenhower urging the termination of the federal tax in order that the state of New York could grant taxing authority to major cities. In New York state the telephone tax produces some \$70 million in income and the governor would like to apply this revenue to provide more funds for the state's system of schools. Following the meeting, the White House issued a statement which noted the "urgent need for some payment on the national debt in 1961."

Governor Rockefeller has estimated that New York schools will need about \$100 million in financial assistance during the 1960-61 school year. He has stated that he understands the problems facing the federal government but that he would continue to press for a state law authorizing the imposition of a local telephone tax if the federal government did not extend the levy.

JOSEPH BEIRNE, president of the Communications Workers of America

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(AFL-CIO), has joined the fight on the side of the telephone subscriber and the telephone industry. In a letter to Governor Rockefeller, he called the tax "nothing more than a sales tax and a very unfair one." He pointed out that no other utility is so taxed and that the basis of the tax was unfair. Mr. Beirne noted that the telephone today is a necessity and that the tax was predicated upon the assumption that telephone calls were a form of luxury. He observed that a sound tax must meet some combination of the following standards: (1) It should not imperil business or employment. (2) It should not discourage social or economically desirable activities. (3) It should not single out a selected commodity or service unless it is undesirable and should be discouraged. (4) It should not be disproportionate. (5) Ability to pay should be a factor.

The president of CWA stated that the telephone excise fails to meet any of these standards of a "good tax." He indicated his union's willingness to discuss the matter with the governor, but he stated that his union expressed its wholehearted disapproval of such a tax levy by the state.

Governor Furcolo of Massachusetts has also asked his legislature to impose a 10 per cent tax in anticipation that the federal excise will not be renewed, and Michigan has already adopted a 3 per cent levy.

Between now and the expiration date of June 30th there is bound to be much activity on the part of those who favor the abolition of the tax, despite opposition of the administration.

Unions Utilize Telephone And Teletype in Alerting Membership

AN increased use by labor unions is seen for teletype conferences and tele-

phone newscasts in order to keep the various locals informed of nation-wide activities. Teletype has proven of special value in keeping up the morale of various locals when a strike is in progress.

The Communications Workers of America, in Miami, Florida, has achieved good results through the use of recorded telephone messages. Union members dial a designated number (in the same manner that "weather" is dialed) and receive a recorded pep talk or public service announcements. A similar system has been put into service in New York city and Union President Joseph Beirne is encouraging other locals to follow suit. President Beirne does not think that these recorded messages will replace union publications; however, he does believe that the telephone recorder may be an inexpensive answer to the problem of internal communications within the union.

Television has been utilized by some labor unions but by and large the great expense involved with TV shows has precluded a general use of this medium. Radio, on the other hand, has proven of value to the United Auto Workers Union which has been sponsoring a show entitled "Eye Opener." This program is heard on some 20 stations and features a half-hour interview with public officials, union leaders, etc.

All labor unions, and for that matter all companies which have diverse geographical locations, face the problem of how to let local groups know what the central office is doing. The imaginative use of telephone, teletype, radio, and TV has done much to alleviate this problem.

Gift for Mass Communications Research Center

SYRACUSE UNIVERSITY has announced that the Newhouse Foundation has

TELEPHONE AND TELEGRAPH

made an initial grant of \$2 million for the establishment of the Newhouse Communications Center for education research in mass communications. The grant was described as the first in a series that may well boost the university's communications center to the world's largest study group of the mass communications field.

The Newhouse Foundation was established by Publisher Samuel I. Newhouse and he stated that the gift was an expression of his confidence in the communications industry.

U. S.—Puerto Rico Telephone Cable

THE longest operator-dialed telephone conversation highlighted recent ceremonies opening a new U. S.-Puerto Rico submarine telephone cable system. The call spanned 6,000 miles from San Juan, Puerto Rico, to Honolulu, Hawaii.

Construction of the \$17 million link between the mainland and Puerto Rico was carried out by the Long Lines Department of American Telephone and Telegraph Company and Radio Corporation of Puerto Rico, a subsidiary of International Telephone & Telegraph Corporation.

Kenneth M. Barbier, president of Radio Corporation of Puerto Rico, placed the first call over the cable to Frederick R. Eckley of the Long Lines Department of AT&T. The conversation between the two men demonstrated how a business or personal call could span the 6,000-mile distance from the Atlantic to the Pacific in a matter of seconds. A party in San Juan, for instance, now merely picks up his phone and gives the operator the Honolulu number he is calling. Within seconds the called telephone is ringing.

Prior to the cable opening, radio circuits provided the only telephone service from the U. S. to Puerto Rico.

It was during last November and this January that the twin cables were laid by the veteran cable ship *Monarch*. From West Palm Beach, Florida, the cables lie on the bottom of the intracoastal waterway and then pass underground across Palm Beach to the Atlantic ocean. From there the deep-sea section continues 1,250 miles southeast to San Juan. Part of this deep-sea segment crosses Brownson Deep—a great valley in the Atlantic sea floor almost five miles deep.

Operators in the United States now can dial directly to all phones in San Juan, which total 65 per cent of all phones on the island of Puerto Rico. San Juan operators can dial direct on 90 per cent of all calls to the U. S. and Canada.

Aluminum "Pipes" Transmitting Phone Calls

THE International Telephone & Telegraph Corporation is testing a system of aluminum "pipes" to transmit TV programs and telephone calls. The "pipes" are specially treated aluminum wire formed like a tightly coiled spring. TV pictures are being sent over these pipes in what is called "pulse code modulation." This involves the transmission of electrical signals of very high frequencies within the hollow conductors. The advantage of the "pipes" is that they can handle wider band widths than coaxial cables and therefore can transmit a greater number of TV signals or calls in a given time. The three-inch diameter "pipes" could, it is believed, relieve overloaded facilities between major cities.



Financial News and Comment

By OWEN ELY

Computers Promise Big Savings

WHILE it sometimes seems as though the electric utilities were approaching a practical limit in effecting operating economies, the use of computers is ushering in a new era of increased automation with resulting closer controls and new savings in operation. They are now being used not only for accounting and billing purposes, but also to improve engineering practice, to control the dispatching of electricity in big systems and power pools (so as to obtain the cheapest system power available at any given time) and also to eliminate most of the remaining labor in generating plants.

The new automation should also help reduce the cost of equipment. *Business Week* (October 17, 1959) reported that General Electric's power transformer division at Pittsfield, Massachusetts, has now been able, with the use of computers, to reduce by 40 per cent the time required to turn out transformers. Engineering work, which used to take three or four months, can now be handled in two or three days by an IBM 705. In the past it had been necessary to hand tailor the big transformers (ranging from 12,000 kilovolt amperes to 250,000 kilovolt amperes

or more), which step up the voltage for long-distance transmission. But by standardizing the components that make up the design, it is now possible to turn the whole job over to a computer, after an engineer has punched the data into a card. The machine in turn punches out control tapes for electronically directed machine tools.

MOREOVER, GE claims that the computer can do a better job because it can examine a number of available designs and try out different approaches, all within a minute or two. Cost savings are said to be large, since by 1968 GE expects to handle four times its present business (in power equipment) while adding only

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a few more engineers to its present reduced staff. Westinghouse Electric and Allis-Chalmers are reported following suit.

Computers are well adapted for use in the load dispatching centers of large systems or power pools. Philadelphia Electric this year will introduce an automatic control system for its load dispatching center which will develop several concepts new to the electric utility industry. According to PE,

Combining a digital computer with an automatic load dispatching system provides a faster and continuous analysis of the various factors involved in keeping electric generation geared to the load demand. After information is processed by the computer, signals are sent to control mechanisms which load each generator to the proper economic level. In addition to its dispatching function, the computer will calculate cost values which will be used in accounting procedures in connection with the power flow interchange with neighboring utilities. All of the complex computations will be done in a fraction of the time previously required, and minute adjustments, made continuously, will assure the most efficient generation.

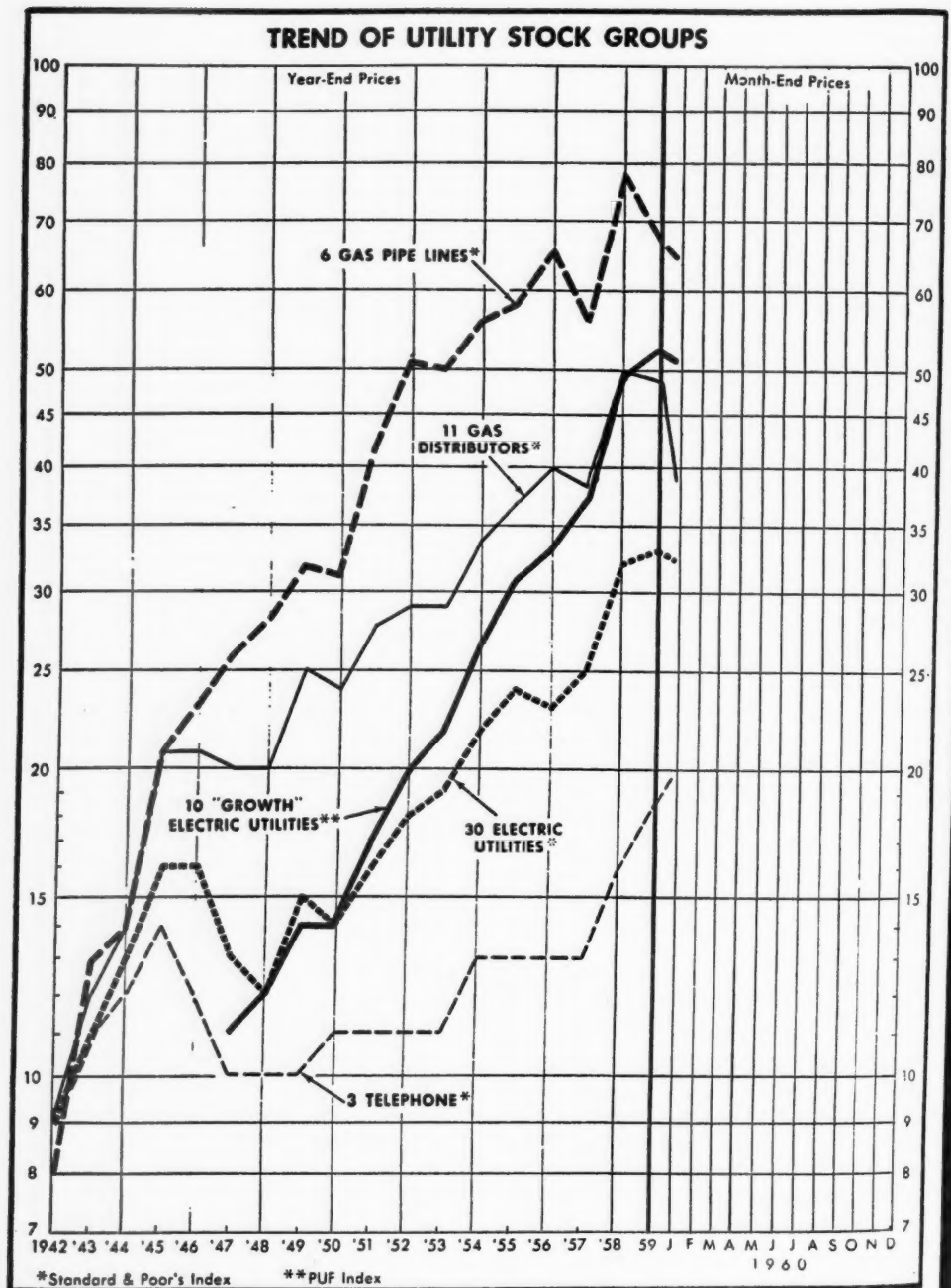
PHILADELPHIA ELECTRIC has ordered a Minneapolis-Honeywell 800 electric computer system—to be delivered in two years—which will use magnetic tape for getting information into and out of the main computer. One reel of tape can store the information contained in some 25,000 customers' records—the equivalent of 133,000 80-column tab cards of the kind now used. The computer will first be used in the finance and accounting departments but will later go to work on payrolls,

materials and supplies, engineering, etc.

IN another two or three years computers will be operating sizable generating plants practically "on their own." Louisiana Power & Light's "Little Gypsy" station with 225,000-kilowatt capacity will be first to become fully automatic. (For safety and maintenance, however, the plant will have three men on duty.) The \$750,000 automatic control system is being designed and built by Daystrom. The utility company had previously had experience with a Daystrom semiautomatic operation at its Sterlington station, where the computer operated virtually twenty-four hours a day for a six months' period. Under the new setup, station startup will take only four and a half hours compared with at least six under conventional manual control; and the station will go off the line immediately when the shutdown button is pressed. The computer will scan and verify some 800 steps involved in starting and stopping the plant. It will be linked with the main Louisiana P&L dispatching station, from which it will receive signals to increase or decrease output. It is said that the computer can detect a dangerous situation in a fraction of a second—about 30 times as fast as a human operator could—permitting the station to run closer to operating limits. (See page 271.)

More recently, Southern California Edison announced that it would build computer supervised controls into unit Nos. 3 and 4 at its new Huntington Beach steam plant (*Electrical World*, January 18, 1960). Anticipated improvements are increased safety, greater continuity of service, and reduction in fuel and manpower costs. The new plants will have eight fewer employees. Tangible savings are estimated at \$1,116,000, plus indirect benefits such as avoidance of major outages.

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The Pipeline Issue over Depletion and Intangibles

ON January 22nd, the Federal Power Commission ruled that United Fuel Gas Company, a subsidiary of Columbia Gas, must reduce its wholesale rates for the period January 1, 1956, through July 13, 1957, by \$2,172,000, making refunds to customer companies. The company had previously (in 1956) been ordered to refund some \$3 million, the original rate increase of \$14,126,000 dating back to 1954.

In the earlier El Paso case the commission had theoretically allowed an overall return of about 6.35 per cent, which reflected a weighted average of 6 per cent on properties beyond the well mouth and 8.61 per cent on well-mouth properties. However, the 8.61 per cent *represented tax savings* (resulting from depletion and intangible drilling costs) *rather than a 6 per cent fair return on a utility basis*. If the company had been allowed to retain the tax savings as is normally the case, the overall return would be less than 6 per cent.

In the United Fuel case a 6½ per cent return on the entire rate base had been legally stipulated and this was therefore assumed to be a fair return. It appeared that this rate of return exceeded the tax

benefits resulting from percentage depletion and intangible well-drilling costs. The commission did, however, permit United Fuel to include the effect of liberalized depreciation in its cost of service for rate-making purposes.

Commissioner Hussey in his dissent had declared that the net effect of the FPC's United Fuel and El Paso opinions was that a gas transmission company, which produces some of its gas, would not be allowed any part of the tax incentives granted by the Internal Revenue Code as an additional return to compensate for the hazardous nature of production activities, unless those incentives exceeded the normal rate of return on transmission properties. The majority, he said, would calculate the allowable return on transmission properties and also calculate the benefit of the statutory tax incentives, and would allow whichever is the greater of the two as a return on producing properties. He held that this was not the intent of Congress and is not consistent with earlier FPC rulings.

WHILE the issue is complex it seems to this observer that the majority of the FPC members are in effect rewriting the tax provisions set up by Congress with

CURRENT YIELD YARDSTICKS (Standard & Poor's Indexes)

	January 27, 1960	1959-60 High	Range Low	1958 High	Range Low
Utility Bonds—A1+	4.71%	4.72%	—4.23%	4.27%	—3.58%
—A1	4.73	4.76	—4.24	4.34	—3.61
—A	4.79	4.94	—4.44	4.51	—3.85
—B1+	5.07	5.19	—4.71	4.96	—4.20
Preferred Stocks*	4.88	4.90	—4.45	4.67	—4.26
Utility Common Stocks	4.03	4.13	—3.71	4.98	—3.81
Spread—Common Stocks versus A1+ Bonds	—0.68	—0.59	—0.52	+0.71	+0.23

*Twelve industrial and two utility issues (high-grade).

respect to producing properties. The issue must eventually be clarified by the courts (the El Paso decision has been appealed) or by Congress.

The matter is important because the gas companies still plan a tremendous expansion program over coming years, requiring substantial equity financing. The stocks of the pipelines and integrated gas utility systems have already been hurt marketwise by the long delays in reaching decisions as well as by the character of recent decisions. During the year 1959, as indicated in the chart on page 252, a representative average of pipeline stocks declined 15 per cent and gas distributor stocks 2 per cent, while telephone stocks advanced 13 per cent and electric utilities 3 per cent.

Con Ed's Labor Productivity Six Times That of 1930

CONSOLIDATED EDISON (which recently raised its dividend rate to \$3) has been able to offset some of the effects of rising wage rates by reducing the number of its employees, which has declined nearly one-half (from 51,000 to 26,000, without enforced layoffs) since 1930. However, because of the sharp increase in weekly pay, the total operating payroll has increased from some \$66 million in 1930 to \$122 million in 1958.

The company recently arranged a trip for thirty New York union leaders to its big atomic power plant at Buchanan, New York.

According to a report in *The New York Times*, representatives of Local 1-2 of the Utility Workers Union were so proud of the safety arrangements that they had worked out jointly with the company that they acted as co-host in a tour of the plant by other labor representatives. Michael Sampson, business manager of

the local, held that with the introduction of improved technology the company could provide higher-paid and more satisfying jobs. The present reduced work force now generates three times as many kilowatt-hours as in 1939—indicating about six times as much output per employee—with the aid, of course, of more efficient generating units, bimonthly billing, and other efficiency measures taken by the company.

Mr. Sampson also noted that the changeover from manufactured to natural gas several years ago had resulted in better jobs for three-quarters of the 1,800 workers formerly engaged in gas production.

Vice President Gallagher of the company was quoted as stating that it was always willing to pay higher wages and to co-operate in safeguarding job security in return for increased skill and productivity.

"Flow Through" Coming in Illinois?

A RECENT court decision in Illinois raises the question as to whether the utilities in that state may be required to adopt "flow through" of tax savings (deferrals) resulting from the use of accelerated depreciation. The supreme court of Illinois in an opinion handed down January 22, 1960, in the matter of *City of Alton et al. v. Illinois Commerce Commission and Alton Water Company*, stated that the commission's approach in the matter of accelerated depreciation in the Alton Water Company rate case was erroneous and that only actual tax expenses should have been allowed. However, it is understood that Alton Water Company has filed a petition requesting a review of the court's opinion.

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As noted before in this department, the use of flow through may result in a significant increase in reported share earnings with a built-in "growth factor" for this portion of earnings.

New York Utilities to Study Power Pooling, Etc.

THERE has been some apprehension that Governor Rockefeller might follow the policy of former Governor Dewey in favoring public power development in New York, but the outlook from the investor-owned utility viewpoint now seems more encouraging.

Last June Governor Rockefeller appointed a seven-member "task force" to survey the state's power needs and re-

sources over the next decade; headed by John Burton, former chairman of the New York State Power Authority, it also included the heads of three large New York utilities.

On January 2nd the committee filed its report, urging the private utilities to set up a statewide research and action committee which, among other objectives, should study atomic power, plan and locate big electric generators, increase the capacity of transmission lines, intensify pooling of power resources, etc. It did not, however, act on the proposal of one of its members who had urged legislation to permit the State Power Authority to build and operate nuclear power plants. In November Governor Rockefeller had proposed that the legislature authorize a site for an atomic test reactor, but he left open

JANUARY UTILITY FINANCING

PUBLIC OFFERINGS OF ELECTRIC AND GAS UTILITY SECURITIES

Date	Amount (Mill.)	Description	Price To Public	Under- writing Spread	Offer- ing Yield	Aver. Yield For Securities Of Similar Quality	Moody Rating	Success Of Offer- ings
1/7/60	\$20	Kansas City P. & L. 1st 5s 1990	100.78	.63C	4.95%	4.68%	Aaa	a
1/7	10	Washington Water Power 1st 5½s 1990	101.12	.84N	5.30	5.01	A	b
1/7	5	Washington Water Power 5½s% S. F. Debs., 1985	101.00	1.10N	5.55	5.16	Baa	a
1/19	3	Central Electric & Gas 5% Conv. Sub. Debs., 1975	100.00	1.88N	5.00	—	B	—
1/20	8	Louisiana Gas Service 1st (s.f.) 5½s 1985	101.64	1.53C	5.75	5.24	Baa	d
1/21	25	Connecticut Light & Power 1st & Ref. 4½s 1990	99.00	.80N	4.94	4.69	Aaa	a
1/27	30	Southern California Edison 1st & Ref. (s.f.) 5s 1985	101.14	.68C	4.93	4.78	Aa	a
<i>Preferred Stocks</i>								
1/13	15	Northern Illinois Gas 5.50% (s.f.) Pfd.	100.00	1.95N	5.50	—	—	a
<i>Common Stock—Offered to Public</i>								
1/20	9	Kansas Gas & Electric	47.00	1.54	3.49	—	Earns.- Price Ratio 5.9%	d

C—Competitive. N—Negotiated. a—The issue was reported well received. b—The issue was reported fairly well received. d—It is reported the issue sold slowly.

Source, Irving Trust Company

PUBLIC UTILITIES FORTNIGHTLY

the question whether it should be built by private industry or the federal government.

According to the committee, power needs in New York state seem to be well provided for by currently scheduled expansion over the next five years. However, with respect to later years it said, "we should think bigger and act bigger." Seven utility companies serving 98 per cent of New York power users have now formed an association to study the future of electric power pooling and atomic power development in New York. The executive director will be Alexander M. Beebee, former president of Rochester Gas & Electric.

John E. Durnning, dean of engineering at Columbia University, will direct the nuclear program. Howard Harrington of Niagara Mohawk Power will head the study of the transmission (power pooling) program.

Some TVA Statistics

IN January TVA reported that the average annual use of electricity by residential consumers in its area reached a record high of 8,100 kilowatt-hours for the calendar year 1959. It pointed out that this figure was more than twice the national average of 3,550 kilowatt-hours.

TVA also stated the average cost of a kilowatt-hour to the residential users dropped during the year from 1.04 cents to 1.02 cents, about 40 per cent of the national average cost of power. Total sales during the year, TVA said, were 58 billion kilowatt-hours, amounting to \$237.5 million in revenue. These figures compare with 1958 sales of 57 million kilowatt-hours and revenue of \$234.9 million.

Virtually half of the power sold by TVA in 1959 was to federal agencies, chiefly the AEC.



FINANCIAL DATA ON ELECTRIC UTILITY STOCKS

Annual Rev. (Mill.)		1/27/60 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% In- crease	Aver. Incr. In Sh. Earnings, 1953-58	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
\$297	S American Elec. Power	48	\$1.80	3.7%	\$2.28N	—	7%	21.0	79%	36%
57	O Arizona Pub. Serv.	38	1.20	3.2	*1.81Se	D5	9	*21.0	66	28
12	O Arkansas Mo. Power	21	1.00m	4.8	1.34Se	—	2	15.7	75	32
36	S Atlantic City Elec.	29	1.10	3.8	*1.36N	8	8	*21.3	81	33
153	S Baltimore Gas & Elec.	25	1.00	4.0	1.41Se	23	7	17.7	71	41
7	O Bangor Hydro-Elec.	39	2.00	5.1	3.10De	23	5	12.6	65	33
6	O Black Hills P. & L.	32	1.44	4.5	2.53Oc	5	4	12.6	57	32
109	S Boston Edison	60	3.00	5.0	3.64Je	NC	4	16.5	82	43
27	A Calif. Elec. Power	20	.80	4.0	*1.16Se	9	5	*17.2	69	35
23	O Calif. Oreg. Power	33	1.60	4.8	1.93My	1	3	17.1	83	37
9	O Calif. Pac. Util.	20	.90	4.5	1.33N**	13	4	15.0	68	31
70	S Carolina P. & L.	36	1.32	3.7	2.17De	8	5	16.6	61	42
32	S Cent. Hudson G. & E.	20	.80	4.0	*1.39Se	5	5	*14.4	58	36
23	O Cent. Ill. E. & G.	35	1.44	4.1	2.18N	7	11	16.1	66	43
39	S Cent. Ill. Light	34	1.52	4.6	2.28N	14	8	14.9	67	33
55	S Cent. Ill. P. S.	45	1.76	3.9	2.69Se	5	13	16.7	65	35
17	O Cent. Louisiana Elec.	44	1.80	4.1	2.09Se	D8	7	21.1	86	30
39	O Cent. Maine Power	24	1.40	5.8	*1.67N	D2	4	*14.4	83	33
147	S Cent. & South West	30	.96	3.2	1.38Se	10	8	21.8	69	40
12	O Cent. Vermont P. S.	19	1.08	5.7	*1.34Oc	D1	9	*14.2	81	35
128	S Cincinnati G. & E.	31	1.50	4.8	1.85Se	D4	3	16.7	80	43
8	O Citizens Util. "B"	12	.53	4.4	.69Se	6	6	17.4	77	48

FINANCIAL NEWS AND COMMENT

Annual Rev. (Mill.)	(Continued)	1/27/60 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% In- crease	Aver. Inc. 1st Sh. Earnings 1953-58	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
119	S Cleve. Elec. Illum.	50	1.80	3.6	2.93Se	14	5	17.1	61	45
7	O Colo. Cent. Power	23	.75	3.3	1.08De	8	7	21.3	69	45
46	S Columbus & S. O. E.	41	1.60	3.9	2.38N	18	—	17.2	67	30
405	S Commonwealth Ed.	57	2.00h	5.8h	3.65N	15	7	15.6	55	43
14	A Community Pub. Serv.	26	1.00	3.8	1.43Se	7	5	18.2	70	46
84	O Conn. Lt. & Pr.	23	1.10	4.8	*1.38De	D2	5	*16.7	80	36
582	S Consol. Edison	62	3.00	4.8	*3.87Se	7	5	*16.0	78	36
228	S Consumers Power	55	2.60	4.7	3.64N	17	1	15.1	71	38
83	S Dayton P. & L.	50	2.40	4.8	3.22Se	D3	4	15.5	74	40
50	S Delaware P. & L.	66	2.28	3.5	3.18Se	13	9	20.8	72	33
246	S Detroit Edison	42	2.00	4.8	2.34De	8	3	18.0	85	47
145	A Duke Power	44	1.40i	3.2	2.18Oc	NC	9	20.2	64	46
101	S Duquesne Light	23	1.10	4.8	*1.44De	3	6	*16.0	76	35
33	O East. Util. Assoc.	42	2.20	5.2	2.99N	10	3	14.0	74	34
3	O Edison Sault Elec.	19	.90	4.7	1.43Se	27	8	13.3	63	34
16	O El Paso Elec.	34	1.16	3.4	1.65N	4	8	20.6	70	37
12	S Empire Dist. Elec.	26	1.36	5.2	1.82De	14	3	14.3	75	33
57	S Florida Power Corp.	29	.80	3.1	1.07Se	D12	15	27.1	75	35
145	S Florida P. & L.	52	.88	1.5	1.93De	10	18	26.9	46	42
4	O Florida Pub. Utils.	20	.72	3.6	1.22Se	3	3	16.4	59	31
213	S General Pub. Util.	23	1.12	4.9	*1.62Se	4	5	*14.2	69	40
7	O Green Mt. Power	19	1.10	5.8	1.23N	D14	10	15.4	89	37
70	S Gulf States Util.	30	.90	3.0	1.36N	8	7	22.2	67	32
51	A Hartford Elec.	63	3.00	4.8	*3.81Se	—	2	*16.5	79	40
25	O Hawaiian Elec.	55	2.50	4.5	3.26Se	11	6	16.9	80	34
94	S Houston L. & P.	68	1.60	2.4	3.04De	3	8	22.4	53	41
30	S Idaho Power	48	1.70	3.5	2.15N	D18	9	22.3	79	33
92	S Illinois Power	42	2.00	4.8	2.65N	32	7	15.8	75	37
49	S Indianapolis P. & L.	40	1.70	4.3	2.41Se	14	7	16.6	71	35
31	S Interstate Power	19	.90	4.7	1.19Se	10	4	16.0	76	32
37	S Iowa Elec. L. & P.	35	1.60	4.6	2.40N	16	5	14.6	67	40
44	S Iowa-III. G. & E.	39	1.90c	4.9	2.48Se	6	—	15.7	77	43
41	S Iowa P. & L.	34	1.60	4.7	2.01Se	4	1	16.9	80	34
35	O Iowa Pub. Ser.	19	.80	4.2	1.24N	10	3	15.3	65	32
15	O Iowa Southern Util.	30	1.36	4.5	2.20De	12	4	13.6	62	40
61	S Kansas City P. & L.	47	2.20	4.7	3.01N	D2	5	15.6	73	34
33	S Kansas G. & E.	46	1.64	3.6	2.76De	10	8	16.7	59	36
50	S Kansas P. & L.	32	1.36	4.3	2.30Se	15	9	14.0	59	34
43	O Kentucky Util.	34	1.60	4.7	2.76Se	17	7	12.3	58	40
7	O Lake Superior D. P.	24	1.20	5.0	1.68Se	7	2	14.3	71	41
122	S Long Island Ltg.	31	1.30	4.2	*1.99Se	3	6	*15.6	65	34
61	S Louisville G. & E.	40	1.40	3.5	2.43Se	10	6	16.5	58	42
11	O Madison G. & E.	47	1.80	3.8	4.03Se	16	2	11.7	45	45
5	A Maine Pub. Serv.	21	1.20	5.7	1.45N	D7	6	14.5	83	40
28	O Michigan G. & E.	76	1.70j	5.4	5.67Se	26	9	13.4	30	37
32	S Middle South Util.	54	1.90	3.5	2.80N	7	5	19.3	68	39
33	S Minn. P. & L.	35	1.60	4.6	2.20N	D1	3	16.0	73	33
3	O Miss. Valley P. S.	30	1.90	4.7	2.34Se	12	5	12.8	60	33
15	S Missouri P. S.	17	.72f	4.2	.95Oc	D1	3	17.9	76	30
7	O Missouri Util.	28	1.36	4.9	1.71Se	4	—	16.4	80	30
44	S Montana Power	23	.80	3.5	*1.40Se	8	9	*16.4	57	39
167	S New England Elec.	21	1.08	5.1	1.29Se	7	1	16.3	84	36
46	O New England G. & E.	22	1.16	5.3	1.70N	8	6	13.0	68	41
98	S N. Y. State E. & G.	26	1.20	4.6	*1.93N	5	9	*13.5	62	38
264	S Niagara Mohawk Pr.	35	1.80	5.1	*2.03Oc	D6	1	*17.2	89	28
92	O Northern Ind. P. S.	52	2.20	4.2	3.05Se	10	3	17.0	72	36
155	S Northern Sts. Power	23	1.10	4.8	1.41De	8	3	16.3	78	36
11	O Northwestern P. S.	21	1.10	5.2	1.52Se	6	2	13.8	72	32
138	S Ohio Edison	62	2.64	4.3	3.96De	10	3	15.7	67	40
54	S Oklahoma G. & E.	30	1.12	3.7	1.46De	—	9	20.5	77	31
26	O Orange & Rockland Utils. .	28	.90	3.2	*1.29De**	3	16	*21.7	70	27
17	O Otter Tail Power	31	1.80	5.8	2.51N	22	1	12.4	72	30
535	S Pacific G. & E.	63	2.60	4.1	3.75Se	3	6	16.8	67	34
52	O Pacific P. & L.	37	1.60	4.3	*1.90N	D28	7	*19.5	84	30

PUBLIC UTILITIES FORTNIGHTLY

Annual Rev. (Mill.)	(Continued)	1/27/60 Price About	Divi- dend Rate	Approx. Yield	Recent Share Earnings	% In- crease	Aver. Inc. In Sh. Earnings 1953-58	Price- Earnings Ratio	Div. Pay- out	Approx. Common Stock Equity
131 S	Penn P. & L.	26	1.25	4.8	1.70N	6	5	15.3	73	34
248 S	Phila. Elec.	50	2.24	4.5	2.87Oc	3	3	17.7	79	38
36 O	Portland Gen. Elec.	28	1.20	4.3	1.69N	D11	7	16.6	71	37
72 S	Potomac Elec. Pr.	27	1.32	4.9	*1.64Se	12	6	*16.5	80	36
97 S	Pub. Serv. of Colo.	54	1.90k	3.5	2.57Se	—	5	21.0	74	33
344 S	Pub. Serv. E. & G.	37	1.80	4.9	2.42De	7	3	15.3	74	35
81 S	Pub. Serv. of Ind.	44	2.10	4.8	2.73N	D6	4	16.1	77	33
32 O	Pub. Serv. of N. H.	18	1.04	5.8	1.30Oc	4	6	13.8	80	36
15 O	Pub. Serv. of N. M.	35	1.00	2.9	1.51Se	12	13	23.2	66	34
27 S	Puget Sound P. & L.	30	1.44	4.8	2.09Se	19	10	14.4	69	42
65 S	Rochester G. & E.	46	1.80o	3.9	*3.33Se	28	4	*13.8	54	34
9 S	St. Joseph L. & P.	30	1.50n	5.0	2.24Se	18	2	13.4	67	34
59 S	San Diego G. & E.	25	1.12	4.5	1.69N	38	3	14.8	66	35
11 O	Savannah E. & P.	30	1.00	3.3	1.26N	D14	8	23.8	79	32
11 O	Sierra Pacific Pr.	38	1.60	4.2	2.37N	16	8	16.0	67	31
256 S	So. Calif. Edison	58	2.60	4.5	3.83N	NC	8	15.1	68	35
7 O	So. Carolina E. & G.	35	1.30	3.7	1.75N	D6	11	20.0	74	33
272 S	Southern Colo. Pr.	18	.90	5.0	1.18N	D22	4	15.3	76	36
20 S	Southern Co.	41	1.40	3.4	1.93De	7	7	21.2	73	34
27 S	So. Indiana G. & E.	32	1.60	5.0	2.52N	5	3	12.7	64	35
8 O	So. Nevada Power	29	1.10	3.8	1.85N	19	6	15.7	60	46
4 O	Southwestern E. S.	17	.72	4.2	1.00De	4	5	17.0	72	28
47 S	Southwestern P. S.	47	1.68	3.6	2.07N	15	7	22.7	81	37
32 A	Tampa Elec.	25	.72	2.9	.98De	10	9	25.5	73	33
168 S	Texas Utils.	73	1.92	2.6	2.90N	6	11	25.2	66	41
42 S	Toledo Edison	16	.70	4.4	1.16Se	5	4	13.8	60	31
17 O	Tucson G. E. L. & P.	25	.76	3.0	1.08Se	D10	9	23.1	70	41
132 S	Union Elec. of Mo.	33	1.64	5.0	*1.82N	6	6	*18.1	90	32
36 O	United Illum.	28	1.38	4.9	1.66Oc	1	3	17.0	83	50
6 O	Upper Peninsula Pr.	28	1.60	5.7	1.73Se	5	2	16.2	92	32
45 S	Utah Power & Light	33	1.32	4.0	1.85N	5	6	17.8	71	44
140 S	Virginia E. & P.	36	1.10	3.0	1.67Oc	2	13	21.6	66	40
36 S	Wash. Water Pr.	41	2.00	4.9	*2.66De	10	8	*15.4	75	32
142 S	West Penn Elec.	34	1.60	4.7	2.34N	4	6	14.5	68	32
77 O	West Penn Power	55	2.40	4.4	3.46Se	6	6	15.9	69	38
12 O	Western Lt. & Tel.	42	2.00	4.8	3.20De	14	2	13.1	63	41
28 O	Western Mass. Cos.	25	1.20	4.8	1.69De	2	—	14.8	71	50
119 S	Wisc. Elec. Pr. (Cons.) ...	38	1.80	4.8	2.75Se	25	1	13.8	65	40
44 O	Wisconsin P. & L.	31	1.48	4.8	2.32Se	18	3	13.4	64	37
43 S	Wisconsin P. S.	27	1.30	4.8	1.88N	8	3	14.4	69	35
Averages				4.3%		7%	6%	16.8	73%	
Foreign Companies										
215 S	Amer. & Foreign Pr.	9	\$.50	5.6%	\$1.79Se	D10%	0%	5.0	28%	57%
129 A	Brazilian Traction	5	—	—	.64De+	D58	—	7.8	—	76
83 A	British Col. Pr.	36	1.40	3.9	1.95De+	D16	7	18.5	72	28
20 O	Calgary Power	20	.40	2.0	.89De+	11	18	22.5	45	31
19 A	Gatineau Power	36	1.50	4.2	2.55De+	7	9	14.1	59	35
49 O	Mexican L. & P.	15	1.00b	6.7	1.66De+	D16	—	9.0	60	41
15 A	Quebec Power	33	1.60	4.8	2.34De+	8	10	14.1	68	53
71 A	Shawinigan Water & Pr. ..	31	.68	2.2	1.60De+	5	23	19.4	43	38

*Deferred taxes resulting from liberalized depreciation are not normalized. If they had been normalized the price-earnings ratio would be higher. +—December, 1958. **On average shares, D—Decrease. NC—Not comparable. A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. b—Also 5 per cent stock dividend May 1, 1959. c—Also 5 per cent stock dividend June 10, 1959. f—Also stock dividend of one-half per cent quarterly. h—Also 2½ per cent stock dividend December 1, 1959, included in yield. i—Also 15 per cent stock dividend January 29, 1959. j—Also 3 per cent stock dividend (paid each year-end) included in the yield. k—Also 5 per cent stock dividend February 20, 1959. m—Also 5 per cent stock dividend June 15, 1959. n—Also 10 per cent stock dividend November 20, 1959. o—Also 3 per cent stock dividend January 25, 1960.

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What Others Think

EEI Reports on National Water Resources

THE Edison Electric Institute submitted a 55-page report in January to Senator Kerr (Democrat, Oklahoma), chairman of the Select Committee on National Water Resources (established by Senate Resolution 48). The report was made at the request of the committee, which wanted to know more about the anticipated water requirements of the electric utility industry between 1959 and 1980. In addition, information was asked on future electric energy demands and capacity requirements by regions of the country; estimates of per capita energy demands for the United States in 1959, 1970, 1980, and the year 2000; recommendations for adding capacity and costs of production, including information on water needs; estimated amounts of primary and secondary hydro power that would be developed in 1970 and 1980; general suggestions by EEI on trends in production of electric energy, on power requirements of the nation, and means by which they could best be met, on water requirements for hydro power and cooling, and on any other matters of value in consideration of the nation's water problems.

In view of the fact that EEI did not have access to complete information on how power suppliers other than investor-owned utilities would expand their capacity requirements in the future years of

1970 and 1980, any material discussing recommended means of serving future loads was confined to only EEI companies, the report stated.

Answers to the information requested were given under the following headings:

- I. Peak Load, Capability, and Energy Requirement Forecasts.
- II. Production Costs of Representative Conventional Thermal Plants.
- III. Nuclear Power.
- IV. Hydro Development.
- V. Water Requirements for Thermal Plants.

TO make its forecasts for the total United States on peak load, capability, and energy requirements, the EEI said it used the following method:

In order to supply this information by FPC regions, as requested by the Select Committee, the Task Force members made estimates of the peak loads and energy requirements in their respective regions. To estimate per capita electric energy use for the entire United States by sales classifications, forecasts were made of kilowatt-hour sales in the respective categories. These forecasts were then compared with population estimates of the U. S. Bureau of the Census.

PUBLIC UTILITIES FORTNIGHTLY

Kilowatt-hour sales on a national basis are influenced by the level of business activity, the growth in the economy, and population. In analyzing the historical trends in kilowatt-hour sales, it was found that positive relationships exist between kilowatt-hour sales in the various customer classifications and components of the Gross National Product in constant dollars, and the Federal Reserve Board index of industrial production. Therefore, by a series of correlation¹ it was found that long-term estimates of kilowatt-hour sales could be derived with a reasonable degree of confidence from estimates of the growth in the national economy as measured by Gross National Product in constant 1954 dollars.

EEI said two such estimates were made, one assuming GNP (in constant dollars) would continue to grow at the 3.57 per cent average annual rate of the past twelve years (1946-58) and the other assuming an average annual increase in GNP of 3 per cent per year, which is approximately the average rate of growth of GNP (in constant 1954 dollars) over the past fifty years. The aggregate kilowatt-hour generation as estimated by the EEI Task Force by FPC regions coincided with the projection of kilowatt-hours base on the average rate of growth in GNP between 1946 and 1958—3.57 per cent per year compounded. Therefore, this projection of GNP was adopted for the purpose of estimating per capita sales by customer classifications for the years 1959, 1970, and 1980.

¹ Household and farm sales show a definite correlation with disposable personal income; commercial sales correlate with personal consumption expenditures for services; and industrial sales correlate with the FRB index of industrial production all of which, in turn, can be correlated with GNP in constant dollars.

The tables shown on pages 261, 263, and 265 contain projections for the total electric industry in terms of generation, use per capita, peak loads and energy requirements, and types of generation employed.

Forecasts for Investor-owned Utility Companies

EEI said it confined its forecasts of how utility companies would expand their capacity requirements in 1970 and 1980 to investor-owned utilities. Certain factors, EEI reported, affect installation of capacity and load growth in the various FPC regions. It said individual regional peak loads occur in both the summer and December periods. Thus, peak loads are customarily reported on a summer and December basis, but it must be realized that local conditions can alter the exact time of the peak for individual systems. The report continued:

New capacity is always scheduled for installation just ahead of the peak-load period for the year. Thus, companies with summer peak loads plan their capacity additions for initial operation in the spring, while companies with December peaks plan to have their new capacity additions go into service in the fall. An inspection of Table V (page 265) . . . indicates that the estimated rate of load growth is by no means uniform as between the regions. The resulting figures are related to the probable population shifts to the southern, southwestern, and western sectors of our country and the nature of anticipated economic changes.

Growing loads, EEI added, have an effect on the type of capability installed in the future. Hydro capability may presently provide cheaper power than thermal at the load center in certain sections of the country. But this situation may not continue as loads increase and the number of

WHAT OTHERS THINK

TABLE I
Peak Load, Capability, and Energy Requirements
Total United States
Projected by Edison Electric Institute

	1959	1970	1980
Sales (Billion Kilowatt-hours)			
Domestic (Residential and Rural)	184	450	920
Industrial and Commercial	415	820	1,490
Other	26	40	50
Total Sales (Billion Kilowatt-hours)	625	1,310	2,460
Output (Billion Kilowatt-hours)			
Electric Utility Industry	707	1,481	2,795
Self-generation (a)	83	92	100
Total U. S. (Billion Kilowatt-hours)	790	1,573	2,895
Load (Thousand Megawatts)			
Electric Utility Industry	129	265	501
Self-generation (a)	16	18	20
Total U. S.	145	283	521
Capability (Thousand Megawatts)			
Electric Utility Industry	165(b)	305(c)	576(c)
Self-generation (a)	18	21(c)	23(c)
Total U. S.	183	326	599

(a) Generation of energy by an industrial plant for its own use. (b) Task Force figure of 159,000 megawatts represents about a 97 per cent coverage of the total electric utility industry. (c) Based on an assumed margin of 15 per cent which is not purported to be a required reserve, but is considered to be adequate, on the average. Required reserve margins vary from system to system, depending on operating characteristics of the system.



TABLE II
Energy Use Per Capita
Total United States
Projected by Edison Electric Institute

	1959	1970	1980
Estimated Population (Millions)	176	208	245
Kilowatt-hour Sales Per Capita			
Domestic (Residential and Rural)	1,044	2,161	3,749
Industrial and Commercial	2,354	3,939	6,071
Other	147	192	204
Total Sales Per Capita	3,545	6,292	10,024
Kilowatt-hour Output Per Capita			
Electric Utility Industry (a)	4,010	7,113	11,390
Self-generation	417	442	407
Total Output Per Capita	4,481	7,555	11,797

(a) Difference between total sales per capita and output per capita of electric utility industry represents losses incurred in serving utility customers. Self-generation sources are not subject to sale and, therefore, are not included in the sales per capita figures.

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economic hydro sites decrease. The EEI report stated:

While the electric industry makes long-range forecasts extending over ten years or more, programing of specific plans, design, and actual construction falls within a five-year range. Thus, actual construction closely precedes and is related to the growth patterns in any region as they are about to take place. The result is a long-standing record by the investor-owned utilities of anticipating and adequately meeting the electric power needs of the public served.

Production Costs of Conventional Thermal Plants

THE Select Committee requested data on the capital and operating cost of new generating units to be placed in service in 1970 and 1980. The EEI Task Force found it had to decide first on the treatment of considerations of a general economic nature; second, to determine a "representative unit"; and, third, to recognize differences among the various FPC regions.

From the point of view of national policy, EEI said, the most important question is whether the electric utility industry can look forward to a continuation of the gains in efficiency and consequent improvements in productivity, that have characterized its performance in the past. Three things affect the answer. They are fuel supplies, growth in demand for energy, and advances in the technology of electric generation. EEI remarked:

Inasmuch as changes in the general price level are irrelevant to a discussion of real costs, all data are stated in terms of current (1959) dollars. Wage rates were held constant because changes in real wage rates would certainly pervade the entire economy and would introduce

a distortion in comparing present with future efficiency in the art of producing electric power. Fuel costs were assumed to remain unchanged in view of the larger reserves of suitable fuels which are expected to be adequate to fill the needs of the economy in 1970 and 1980. Many costs were calculated on a current basis because of the difficulties of estimating interest rate and tax rate changes so far into the future. The . . . estimate, therefore, reflects mainly the technological advances in the art of electric generation, including the trend towards larger units, improved efficiency of high temperatures, and steam pressures and new manufacturing processes.

EEI said it determined a "representative unit" for each region by examination of the likely course of development during future years. Initial and additional units were averaged to get the cost of a multiunit plant. Each "representative unit" embodies the composite characteristics of each FPC region and may be considered the typical plant, as to size and type, that would be constructed in 1970 and 1980 in that region.

The report stated that capability requirements and cost factors were examined in each of the FPC regions by engineers familiar with the utility systems of the region. Composite capability and cost figures were developed from the weighted average of all the possible units that might be installed in various locations within the specific region in or about the years 1970 and 1980. In determining the capital charge component of total production cost, a uniform capital charge percentage figure of 14 per cent was assumed to cover taxes, depreciation, and return.

The capability of electric plants in 1970 for the eight FPC regions would range from 150,000 kilowatts to 400,000 kilo-

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watts, with the average plant about 300,000 kilowatts. In 1980 it was estimated the plants would range from 225,000 kilowatts to 600,000 kilowatts with the average size being 460,000 kilowatts. Capital costs per kilowatt in 1970, it was believed, would be between \$125 and \$175 with the average about \$145. For 1980 they would go down a bit, ranging between \$110 to \$160 per kilowatt, the average amount about \$133 per kilowatt. The average cost of operation for the eight regions in 1970 would be 5.73 mills, the EEI Task Force predicted, going down to 5.45 mills by 1980.

Nuclear Power

THE expected installation of nuclear capacity by 1970 and 1980 in the several regions by the investor-owned systems was shown in Table V. Any long-range forecast, the EEI said, must be necessarily speculative. While there is much participation now by investor-owned utilities, actually 131 companies which are engaged in projects involving study, design, construction, and operation of nuclear plants, more experience is required before a better perspective is obtained to guess at future development.

By 1965 the picture should have be-

come a little clearer. The EEI report stated that

... The national objective of our country is to achieve competitive nuclear power in the higher cost fuel areas of the U. S. within ten years. The investor-owned utility industry subscribes to this objective. ... Fuel for such plants is also being improved. However, the cost of power is still high, but the margin over fossil fuel power is narrowing. The rate at which nuclear power will gain on fossil fuel is difficult to predict, but the estimates in Table V are based on the best opinions available at the moment.

By 1970, the report declared, about 7.7 million kilowatts of nuclear capability is projected for use in serving the loads of the investor-owned utility systems. This will represent about 3 per cent of 1970 total capability projected for the investor-owned systems. By 1980, 38.9 million kilowatts of nuclear capability is estimated to be in service, or about 8 per cent of the total investor-owned capability. It stated on this:

... substantial amounts of nuclear capability will probably be installed in the high fossil-fuel cost sections of the

TABLE III

Peak Loads and Energy Requirements
Total Electric Utility Industry
Forecasted by Edison Electric Institute

FPC Region	1959		1970		1980	
	Peak Load (Mw.)	Energy Req. (M Kwhr.)	Peak Load (Mw.)	Energy Req. (M Kwhr.)	Peak Load (Mw.)	Energy Req. (M Kwhr.)
I ...	27,312	138,846	49,815	268,468	82,851	458,776
II ...	23,839	140,644	45,507	267,200	84,093	493,600
III ...	23,909	138,220	55,105	310,093	110,209	612,062
IV ...	14,744	80,649	29,147	151,757	53,125	276,768
V ...	14,185	69,967	40,315	197,023	88,580	440,406
VI ...	2,613	13,102	7,020	35,583	14,791	72,425
VII ...	9,867	57,021	19,500	108,624	35,700	193,158
VIII ...	12,139	68,465	25,383	142,318	44,445	247,665
	129,000	706,914	265,000	1,481,066	501,000	2,794,860

country. For example, in 1970 it is expected that about 7 per cent of the investor-owned capability in the New England area will probably be nuclear. By 1980 this percentage is expected to be 16. Comparable percentages of nuclear capability in Region VIII are expected to be 5.2 per cent in 1970 and 19.2 per cent by 1980.

The report said that should future developments increase the competitive position of nuclear power, it would merely displace future projected conventional thermal capacity and would have only an insignificant influence on hydro development.

Hydro Development

THE EEI report on the amounts of hydro power that would be developed in 1970 and 1980 showed that for investor-owned systems 7,219,000 kilowatts of capacity would be added between 1959 and 1970. Between 1971 and 1980, only 4,749,000 kilowatts of capacity would be built—almost 50 per cent less than the previous ten years.

The report pointed out that only in Region VII—Washington, Oregon, Idaho, and Montana—was hydro a really substantial portion of the total amount to be added. The EEI report then went on to state, as follows:

Twenty or thirty years ago when hydro was much more important in some sections of the country than it is today the question of primary and secondary was a serious one. Ten to fifteen years ago in the Columbia river basin interruptible hydro (which is taken to be synonymous with secondary) was such a large percentage of the total energy available that the curtailment of such interruptible as occurred in late 1951 had an important impact on indus-

try. Through the years as the more attractive hydro locations have been developed the bulk of the growth has been carried by thermal plants. . . .

The EEI Task Force concluded that the less important hydro is in the aggregate, the less chance there is for having to waste water for lack of load when the generators are not operating wide open. In other words, it becomes easier to put all the available hydro into *primary* load. The report noted:

Increased consideration is being given to the application of pumped storage to convert valley thermal energy to peak requirements. Some of this pump storage capacity will be in combination with conventional hydro installations while other portions of it will be used in projects that use only the pump storage concept. Because the repetitive recirculation of water from tailrace to headwater to tailrace will result in no consumption of water, no significant impact on the water resources problem will be incurred. . . .

Water Usage

EEI emphasized that there is no consumptive use of water in the actual generation of electric energy at hydroelectric plants. The water is used, but not consumed. But there is some natural evaporation in the reservoirs of storage dam hydro plants.

Water used in thermal plants is mainly for condensing the steam. Only a small proportion of this cooling water, that portion evaporated in cooling towers or ponds, is actually a consumptive use.

However, EEI did admit a considerable volume of water was used, even if not consumed. In the year 1959, the total amount of water circulated through condensers amounted to 26,813 billion gallons, in

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TABLE V
Capability Types Used to Supply
Investor-owned System Loads 1959, 1970, and 1980
Forecasted by Edison Electric Institute

Capability at Time of Regional Peak—Mw.						
Region	Peak Load (Mw.)	Conventional Thermal	Nuclear Thermal	Hydro(a)	Other Sources	Total
1959						
I	26,813	29,010	..	2,640	711	32,361
II	23,160	28,736	60	460	79	29,335
III	12,634	12,634	..	1,945	338	14,917
IV	14,160	16,006	..	763	32	16,801
V	13,044	15,841	..	98	390	16,329
VI	1,316	1,521	..	58	137	1,716
VII	5,026	834	..	3,620	700	5,154
VIII	8,907	7,175	5	2,902	632	10,714
1970						
I	48,961	49,163	3,140	3,847	2,340	58,490
II	44,357	50,565	565	822	700	52,652
III	34,948	35,063	460	3,513	598	39,634
IV	28,406	30,879	242	1,109	89	32,319
V	37,063	38,540	2,150	106	1,100	41,896
VI	3,301	3,658	..	57	165	3,880
VII	10,800	1,432	..	7,156	3,111	11,699
VIII	18,707	16,117	1,162	3,393	1,681	22,353
1980						
I	81,821	81,827	7,990	4,697	2,340	96,854
II	81,593	89,260	5,090	892	886	96,128
III	73,016	73,190	3,110	4,423	467	81,190
IV	51,774	51,259	5,192	1,109	247	57,807
V	81,015	82,309	8,751	106	1,057	92,223
VI	6,977	7,171	300	57	204	7,732
VII	19,900	6,832	1,000	10,258	3,213	21,303
VIII	32,386	24,874	7,467	3,384	3,365	39,090

(a) Median hydro conditions.

1970 it would probably be 57,285 billion gallons and in 1980 about 106,409 billion gallons. (EEI estimated that in 1959 about 123 billion gallons of water would actually be consumed in electric plants and that by 1980 it would amount to 506 billion gallons.) The report then went on to say that

The electric industry realizes the importance of conserving cooling water. Requirements per kilowatt of installed capacity have been materially lowered by utilization of larger units operating at higher temperatures and pressures. This trend will continue and is reflected in the estimated quantities submitted in this report.

Less than one per cent of the water circulated through thermal electric stations is lost through evaporation, the report emphasized.

Status of Electric Service in United States

THE EEI told the Select Committee that the U. S. is far ahead of the rest of the world in the extent and high quality of its electric service. It said it believed the best way to insure an adequate future supply of electricity and a continuation of high quality service, at lowest practical cost, was to continue along proven lines. An important consideration, it stated, is that the investor-owned utilities stand

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ready, able, and willing to meet in full the future power needs of the country in a

manner calculated to serve the best interests of the public.

Jersey Regulation's Silver Anniversary

NEW JERSEY's board of public utility commissioners, better known as the PUC, this year marks the fiftieth anniversary of its founding.

It was in 1910 that the Honorable J. Franklin Fort, then governor of the Garden state, changed the name of the board of railroad commissioners to the board of public utility commissioners and extended the jurisdiction of the board to include all public utilities.

The following year the legislature adopted the Public Utilities Act which prescribed the duties and powers of the newly created board. In the intervening years, the board has handled thousands of cases, ranging from complaints about passengers smoking on trolley cars to the approval of a proposal to construct an atomic reactor to generate electricity.

Board Started with a Handful Of Utilities

MOST of the PUC's busy schedule is taken up with countless reports, hearings, and decisions that are called for as some 800 utilities conduct their daily business with the 5.5 million New Jersey consumers. Starting fifty years ago, with a handful of transportation and service utilities, the PUC now has jurisdiction over six electric companies, eight gas, nine telephone, one telegraph, 36 sewer, 144 water, 409 bus companies, and 34 railroads. It also has limited control over some 200 municipally owned utilities. The only type of utility which has grown less in importance over the years is the street railway, or trolley car, which has practically disappeared. In fact, the one and

only trolley line still operating in the state is Newark's four-mile City Subway which runs from Penn station to the Belleville line along the old Morris Canal bed.

FOURTEENTH president of the three-member PUC board is Ralph L. Fusco of Metuchen, who was first appointed a member in 1956 by Governor Meyner to fill the unexpired term of Mrs. Hortense F. Kessler, who had resigned. Other members are Edward J. Hart of Jersey City and D. Lane Powers of Trenton. Hart formerly served as president but relinquished that post due to illness and was succeeded by Fusco June 23, 1959. Fusco was appointed to a six-year term by Governor Meyner, effective as of August 31, 1959.

A former deputy attorney general, Fusco is an avowed foe of what he calls "bureaucratic inefficiency and lethargy" and has established a policy of processing all cases as expeditiously as possible.

When he took office, he said, there were cases on the books which had been pending for more than twenty years.

"Cases four or five years old were numerous and those two or three years old were still more common. In the bus industry alone, there were 396 outstanding rate cases where temporary allowances had been made but no order entered."

Fusco said that although PUC business is more brisk than ever before, the time interval between filing and disposal of cases has been greatly reduced. He stated:

By using all qualified personnel as hearing examiners and streamlining

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antiquated procedures, we have stepped up our handling of cases to 90 decisions per month compared with 48 per month in 1954. Filing of new cases now averages 80 per month compared with 53 per month five years ago and hearings have increased from 43 to 70 per month in the same period. This indicates an approximate 67 per cent increase in the activities of the board during the last five years.

IN addition to these cases, all of which require formal hearings and decisions, the board handles an average of 260 "informal" complaints per month—usually in the form of letters from consumers—two-thirds of which have to do with transportation utilities and the balance with nontransportation utilities. In the transportation group are letters about service, schedules, curtailments, grade crossings, equipment, and discourtesy to passengers.

However, the nontransportation letters usually involve such items as extension of service to out-of-the-way points, billing and commercial practices, meter tests, and quality of service.

The board takes particular pride, Fusco said, in the scores of letters commending it and the staff for the "prompt, courteous, and effective handling" of these matters.

Pointing out the number of complaints is infinitesimal when compared with the number of persons served, Fusco said the "utilities must be doing an effective job and must be maintaining satisfactory public relations for so few complaints to evolve from 5.5 million users of the utility services."

With the co-operation of industry, the board has prepared revised regulations, with special emphasis on the safety practices of the several utilities. Among the changes ordered are use of the "dead man's control" on all passenger locomotives.

Also, additional safety devices on drawbridges are in process of being installed.

THE board president regards the recent upward revision of the board's fees—paid by utilities—as an important saving to the taxpayers. Fusco stated:

We had been taking in \$70,000 annually in fees, and spending upwards of \$600,000 to carry on the vital work of the PUC. Many attempts had been made by the board to increase the fees charged for its several services with little or no success. A new fee bill, introduced in 1958, finally was passed last year.

It is anticipated that in a few years the fee revenue of the board will amount to upwards of \$300,000, so that more than half of the cost of operating the commission will be borne directly by the utilities affected. For the current year the anticipated fee revenue will be about \$210,000.

Fusco sees the responsibilities of the board as twofold. "We do not set ourselves up as either an iron curtain or bamboo curtain between the utilities and the public. We feel it is our responsibility to see that the public receives safe and adequate service and, secondly, that the utilities are permitted to receive sufficient income from these services to make them safe and adequate."



Energy Conversion Research By EEI

THE Edison Electric Institute announced at the end of January that it would undertake a study of methods to convert various forms of energy directly into electricity. The research, which is to take about a year, will have as its objective the evaluation of the potential of each direct conversion method for the bulk production of electricity. Results of the project are expected to provide the basis for a possible future program or plan of action by EEI in this field.

The March of Events

The institute also extended an invitation to organizations conducting research in direct conversion to submit information to the project's steering committee for inclusion in the study.

In direct conversion, EEI explained, electricity is generated direct from raw energy such as heat, chemical, and nuclear sources without the use of such conventional equipment as turbines and generators. Recently there have been indications that direct conversion devices held promise for significant advances in the efficient generation of electric power for utility use.

Alabama

Big Rate Hike Asked

THE Southern Natural Gas Company of Birmingham, Alabama, has asked the Federal Power Commission to approve nearly \$18 million in rate increases.

Considerable opposition developed immediately in that more than twenty representatives of state public service commissions, public utilities, municipalities, gas distributors, and the federal government spoke out against the increases.

Southern specifically asked the FPC to authorize a \$7,756,600 rate increase. This was in addition to a \$10,135,000 increase sought last year but not yet approved by the FPC. Hearings on the early hike had been postponed until further notice.

The first increase was put into effect last November, subject to any FPC-ordered refunds. Southern originally asked to put the second increase into effect January 1st. But this request was denied.

California

Gas Rate Rise Sought

SOUTHERN CALIFORNIA and Southern Counties Gas companies have filed

rate applications with the California Public Utilities Commission for an increase in consumer gas rates, which would add

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about 60 cents to typical monthly bills. The new rates would affect about 2.4 million households in 12 Southland counties.

Basic reason for the need for additional revenue is continued and increasing purchases of out-of-state natural gas, the companies contended. But also included in higher gas costs, which make increased rates necessary, are advances in taxes and wages, the utilities added. According to company spokesmen, Trans-Western Pipeline Company will begin delivering to the California border next August a gas supply which will reach 300 million cubic feet a day from producing fields in Texas and Oklahoma. Initial price of this gas is anticipated to be 42½ cents per 1,000 cubic feet, as compared to about 15 cents paid for first shipments of out-of-state gas when such purchases were made twelve years ago.

The commission will announce dates of public hearings later.

Feather River Dam

Governor Brown made it known in a TV talk that any available power that results from the construction of the \$1.75 billion project, engineered to provide adequate water for the state, on the

Feather river, will be sold at a fair market value.

He said there is no need to become involved in any public *versus* private power controversy because the program, over the long run, will be a power deficient one. Actually, he said, the project will consume more power than it can eventually produce.

Should power be available from time to time, he promised, it will be sold at market value and the income applied to help meet the costs of the project.

"I want to stress just as strongly as I can," Brown said, "that the purpose of this project is to supply water vital to California's growth and prosperity. That water must be supplied at a price people can afford to pay."

According to Ralph Brody, special adviser to the governor on water, during the initial period of construction, there would be both a surplus of water and power available temporarily since the water is not expected to reach its greatest market place, southern California, until 1971.

Brody estimated the project, upon completion, would generate about 2 billion kilowatt-hours of power a year, but would need 5 billion kilowatt-hours annually to operate the huge facility.

District of Columbia

Transit Fares to Go Up

BUS and streetcar commuters in the Washington, D. C., area will probably pay more for riding the D. C. Transit System by March of this year. The chief accountant of the District of Columbia Public Utilities Commission has agreed that the existing 20-cent fare is inadequate to give the company a reasonable return on its investment.

One plan that has been suggested is to

sell tokens at five for \$1 and make the straight cash fare five cents more than presently charged, or 25 cents. In this way the regular commuter would not have to pay anything more. It was estimated that at least 70 per cent of the present 126 million passengers would buy tokens at five for \$1. About 2.4 million, affected by the five-cent increase, would discontinue use of public transit, it was predicted.

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One of the chief reasons for the request of D. C. Transit System for a

higher fare rate was the costly contract it signed with labor in November of 1959.

Georgia

\$76 Million Power Plant Planned

GEOORGIA POWER COMPANY will build a \$76 million steam-electric generating plant on the Chattahoochee river 12 miles north of Atlanta. It will have a capacity of 500,000 kilowatts when completed. The first 250,000-kilowatt generating unit is scheduled for completion in the spring of 1963 and the second in the spring of 1964. A company engineer said the plant is so designed that more units could be added as needed.

The location is such, a company spokesman said, that Georgia Power will be able to meet the increased electrical needs of

metropolitan Atlanta. It was also revealed that this area of Georgia is expanding industrially at a phenomenal rate. Construction of the McDonough plant is another step in the Georgia Power Company's continuing task of accomplishing the job of having enough power ready and waiting as new industries establish themselves.

The new Georgia Power Company plant will be able to burn either coal or gas.

It is estimated it will consume 4,650 tons of coal a day when round-the-clock operations are started. The plant will boast the most automatic equipment in Georgia. Nevertheless it still will have more than 100 employees.

Kentucky

City Power Plant Bill Turned Down

A BILL to enable cities to acquire and operate their own electric distribution systems was unfavorably reported to the Kentucky senate by its committee on public utilities. The measure would have made it the legislative intent to empower cities to acquire power for resale from the Tennessee Valley Authority or any other governmental agency. It would have required cities to pay out of earnings, in lieu of taxes, certain sums to cities, counties, school districts, and the state.

The proposed legislation would have repealed the so-called Everett Act of 1958, which prohibits cities in which an existing utility plant or facility is located, from duplicating the plant or facility. The Everett Act prohibits a city from acquiring its own plant or facility, other

than by purchase of the existing system, or by the power of eminent domain.

Two-thirds Approve Tax Plan

A PROPOSAL by Kentucky Utilities Company to pay 3 per cent of gross revenues in taxes to 150 incorporated cities in the area it serves has been approved by nearly two-thirds of them. Actually 95 have approved the plan. Others are expected to do so when their councils meet or they can obtain legal authority. Only five cities turned the offer down flat. They were Fulton, Glasgow, Middleboro, Paducah, and Princeton.

Kentucky Utilities made the offer to the cities because of the financial difficulties most of the relatively small communities were experiencing. The company also hoped to encourage greater use of electricity and to obtain new franchises for its operations.

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Louisiana

Automation Milestone

FOR about six months complex data logging and computer equipment has operated the power plant of the Louisiana Power & Light Company around the clock. This nonstop, seven days a week operation was hailed by both the utility and the manufacturer, Daystrom, Inc., as an accomplishment in reliability never before attained in this type of industrial operation.

Actually the test in automation was considered a milestone in industry's search for a means of operating its plants

automatically, without shutdown for service or maintenance, through electronic computer equipment.

The computer used in the Louisiana Power & Light power plant did its job by monitoring other devices, performing computations, making logical decisions. One of the chief advantages seen for automation of this kind is the prevention of costly blackouts. A computer, with its fabulous electronic memory, can make lightning-fast adjustments and changes to varying conditions that would be impossible for human brains and hands.

Missouri

Construction Permission Asked

THE Union Electric Company of St. Louis has filed an application with the Missouri Public Service Commission for authority to construct and operate a \$50 million Taum Sauk pumped storage electric generating station near Lester-ville in Reynolds county. The company said that by 1963 it would need a total generating capacity of 2,706,000 kilowatts to meet customer demands and to provide a reserve for emergencies.

Union Electric's Meramec steam power plant has a fourth section scheduled for completion in 1961, which would bring generating capacity up to 2,387,000 kilowatts.

The additional 319,000 kilowatts which must be added by 1963 can be obtained economically by the proposed Taum Sauk plant, the company stated. More than \$30 million over a 12-year period would be saved by the new plant, Union Electric estimated.

Pennsylvania

Rate Boost Asked

ANOTHER rate increase is being sought by the Manufacturers Light & Heat Company which has applied for a \$1.4 million annual boost effective May 7th. The company said the hike would add about 33 cents a month to heating customers' bills and eight cents a month to nonheating customers' bills. Last December, Manufacturers asked for a \$907,000 increase to cover the state's 1.4 per cent

gross receipts tax. This increase was slated to become effective February 10th.

The Pittsburgh utility said its latest rate increase request is based on a \$2.7 million round of wholesale rate increases by four companies which supply it with natural gas.

C. A. Massa, vice president of Manufacturers, held out some hope for a possible reduction of the latest proposed increase in rates. This would happen if the wholesale suppliers' rates are cut back by

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the FPC, which is studying the request.

New Rail Subsidy Plan

THE city of Philadelphia has come up with a plan that may solve its commuter problem. According to Mayor Dilworth, it would create a nonprofit Passenger Service Improvement Corporation. Under it the Pennsylvania and Reading railroads would act as contract carriers for the new company and would be guaranteed fixed amounts to cover operating costs in the event that revenues did not meet the minimum guaranties. Initially,

the mayor reported, the new agency would function under a city subsidy in excess of \$2 million. Later, however, he added, it was hoped the federal government would match the city's contributions.

The mayor emphasized that success of the new venture on a long-range basis depended on federal aid, which he optimistically expects will be forthcoming. David Berger, Philadelphia city solicitor, who developed the plan, said it was the first combined effort of government, the railroads, and labor to solve the mounting commuter crisis.

South Carolina

Federal—State Hassle

THE South Carolina Electric & Gas Company seems to be caught in the middle of conflicting accounting requirements of the state commission and the Federal Power Commission. The FPC contends the company should have accounted in its 1958 report to stockholders for items dealing with annual accruals of deferred federal income tax.

Company president, S. C. McMeekin, explained that South Carolina Electric has followed accounting practices ap-

proved and required by the South Carolina commission for reports to stockholders and at the same time it had followed accounting practices required by the FPC in its direct report to the federal agency—a fact admitted by the FPC.

"When a conflict of jurisdiction is involved," McMeekin stated, "the company feels that it should conform to the requirements of the state commission in reporting to its stockholders." He added that the company would oppose a federal agency "overriding the state commission" in this manner.

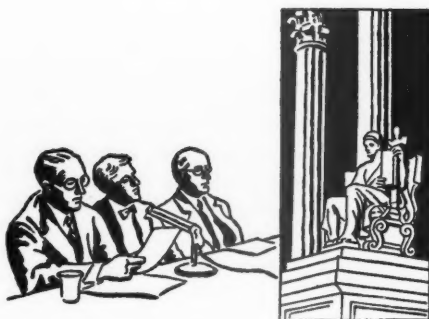
Virginia

Consumer Counsel Resolution

THE house legislative body of the state has introduced a resolution which calls for a study of the advisability of creating a "consumer counsel" office in the state corporation commission. The idea of a consumer counsel would be to have a lawyer charged with the responsibility of representing the public in utility and insurance rate cases before the commission.

The study recommended would direct the Virginia Advisory Legislative Council to ascertain how consumers are represented in rate hearings before the commission and report on whether it would be advisable to create the office of "consumer counsel." The resolution said rate hearings are of a complex nature so that it is difficult for consumers to obtain adequate representation.

Similar proposals in the past have not received much support in the state.



Progress of Regulation

Trends and Topics

Antitrust Policy Applied to Interstate Utilities

THE antitrust laws, directed against monopoly and the lessening of competition, are not ironclad and inflexible. While they are a stout expression of faith in competition, they do not reach every transaction that may diminish utility competition in interstate commerce. Other public interest considerations may be paramount. (Monopoly was discussed generally in PUBLIC UTILITIES FORTNIGHTLY, April 26, 1956, at page 633.)

A particular activity may be exempted from monopoly prohibitions, as, for instance, shipping conference agreements approved by the Federal Maritime Board under the Shipping Act, or agreements between air carriers approved by the Civil Aeronautics Board within the terms of statutory immunity, or a motor carrier merger with commission approval under the Interstate Commerce Act. In each instance the overriding consideration is the public interest in good, efficient service. A recent merger proceeding before the Federal Power Commission applied an express exemption, hinged on commission approval, contained in the Clayton Act itself. The case is of particular interest because, as of the time of this writing, an antitrust suit opposing the merger, stayed pending the commission's decision in the matter, is still before a federal district court.

Commission Weighs Antitrust Laws

The Federal Power Commission approved a merger of Pacific Northwest Pipeline Corporation into El Paso Natural Gas Company, even though it would eliminate Pacific Northwest as a competitor of El Paso (Pacific Northwest Pipeline Corp. et al. Docket Nos. G-13018, G-13019, December 23, 1959, reviewed generally in this issue of PUBLIC UTILITIES FORTNIGHTLY at page 275). Certificates authorizing El Paso to acquire and operate the facilities of Pacific Northwest were granted upon a finding that other factors in the public interest, issuing from the merger, outweigh the loss of competition. These factors include an improved gas supply and utilization of gas reserves, a financially stronger gas supplier, expanded and improved gas service, and lower rates.

By mid-1957, El Paso had acquired 99.8 per cent of Pacific Northwest's

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stock, the primary purpose of which was to gain access to the company's vast Canadian and Rocky Mountain gas reserves for El Paso's markets. Seeing in this transaction a violation of the Clayton Act, the attorney general instituted an antitrust suit under a provision of the act which prohibits the acquisition by one corporation of the stock or assets of another corporation where "the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly." Prodded by this suit and in the belief that the two companies could be operated more efficiently as a single integrated entity, the companies applied to the commission for approval of a merger. They pointed to another provision of the act exempting transactions consummated pursuant to commission authority. Under the Natural Gas Act, the commission has power to authorize the acquisition of facilities for the transportation of natural gas.

The commission noted that Congress, in enacting the exemptive provision, has relied on the commission not to approve an acquisition of assets in violation of the Clayton Act, unless it believes the acquisition will, nevertheless, be in the public interest. The thing the administrative body must determine is the public convenience and necessity. In reaching that determination, it was pointed out, the commission does not have authority to decide whether a given transaction is in violation of the Clayton Act, but it must consider the bearing of the policy of the antitrust laws on the public convenience and necessity.

The commission's view as to weighing antitrust policy seems to accord with a pronouncement by the Supreme Court in a case in which the Interstate Commerce Commission had approved a merger of motor carriers under an express exemption from the operation of the antitrust laws (53 PUR NS 473). The court said the commission "must estimate the scope and appraise the effects of the curtailment of competition which will result from the proposed consolidation and consider them along with the advantages of improved service, safer operation, lower costs, etc., to determine whether the consolidation will assist in effectuating the overall transportation policy." Congress left the resolution of these considerations to the expert judgment of the commission, it was noted, and if the commission does not exceed the statutory limits of its discretion, and if its findings are adequate, its decision will not be upset.

Antitrust Laws Superseded by Regulatory Statutes

Although regulated industries are not per se exempt from antitrust laws and even though repeals by implication are not favored, the antitrust laws are superseded by more specific regulatory statutes to the extent of any repugnancy between them, said the federal appeals court for the District of Columbia (94 PUR NS 175, affirmed by the Supreme Court, 94 PUR NS 1). Where a statute provides for comprehensive and detailed regulation of a particular industry, there is only a limited area for application of antitrust considerations to commission decisions. The contrasting objectives of the Sherman Act and the Federal Power Act limit the application of the antitrust laws to regulated industries, the court indicated.

This does not mean, however, that competitive considerations may not be

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components of the public interest sought to be served by a particular statute, and hence a guide to the commission's exercise of authority. In a later case, in which a natural gas company sought to abandon a gas pipeline in order to make it available for the transportation of petroleum products, the court required the commission to consider the effect of its order upon existing petroleum products carriers in view of the national policy against monopoly expressed in the antitrust laws (13 PUR3d 145).

No Exemption by Implication

The court of appeals for the fourth circuit disagreed with this view of supersession by specific statutes, in a case involving an electric power contract between three power companies (94 PUR NS 161, certiorari denied). It rejected an argument that the Federal Power Commission had been given authority, by way of the regulation of the activities and rates of licensees under the Federal Power Act, to exempt members of a power pool from the prohibitions of the antitrust laws. The court held that the contract, violative of the antitrust statutes, could not become valid by virtue of the commission's approving it as a rate schedule. The court also denied that any repugnancy existed between the Sherman Act and Part II of the Federal Power Act.

"In short," said the same court in another case, "the grant of monopolistic privileges, subject to regulation by governmental body, does not carry an exemption, unless one be expressly granted, from the antitrust laws, or deprive the courts of jurisdiction to enforce them" (86 PUR NS 33). The court rejected a proposition that the antitrust statutes do not have the same application to publicly regulated industries as they have to private enterprises.

Review of Current Cases

Merger of Natural Gas Pipeline Companies Approved With View to Improved Efficiency and Service

THE Federal Power Commission has authorized El Paso Natural Gas Company to acquire by merger the facilities and operations of Pacific Northwest Pipeline Corporation. El Paso's facilities constitute a single integrated system, extending from the Permian basin area of western Texas and eastern New Mexico to Blythe, California. The company also operates a pipeline from the Permian basin area to the San Juan basin area and from there to the California border near Topock, Arizona. About 80 per cent of

El Paso's gas is sold for consumption in California.

Pacific Northwest operates a pipeline system from Ignacio, Colorado, in the San Juan basin, where it is interconnected with El Paso's northern pipelines, to its northern terminus at Sumas, Washington. The company produces gas from its own leaseholds and purchases gas in the San Juan basin and in various fields of the Rocky Mountain area. It also purchases Canadian gas. Pacific and El Paso use jointly their gathering facilities in the San

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Juan basin and have gas exchange agreements in operation.

The commission's presiding examiner, approving the merger, proposed conditions as to the segregation of accounts. The state of California and the commission staff opposed the merger. Pacific Gas and Electric Company, an El Paso customer, neither opposed nor supported it but urged the imposition of a condition that the cost of Pacific's system not fall on the California customers.

Merger Serves Public Interest

The commission discussed specific public benefits issuing from the proposed merger which it found would outweigh any detriment that might be occasioned by the loss of Pacific Northwest as a competitor of El Paso. (The antitrust aspect of this case is considered ante, page 273, under Trends and Topics.) It appeared that Pacific Northwest sought to compete with El Paso only in the California market but did not threaten substantial competition even there. In any event, it was found that any resultant loss of competition would not be substantial. Furthermore, other competition seemed to be in prospect for El Paso both in its market areas and in its producing fields.

El Paso is in need of additional supplies of gas for the growing needs of California, and the merger is a step toward increased supplies. The addition of El Paso's markets will stimulate development of promising sedimentary basins traversed by Pacific's pipeline. With but minor construction, gas can be made to flow southerly from Rocky Mountain sources to El Paso's existing system. The present connection between El Paso and Pacific in the San Juan basin can be strengthened with minor additions. As a result, the commission pointed out, there would be a pipeline system extending from west Texas to

Canada, fully unified and having many sources of supply to serve the combined system markets. Market demands require the flexibility of supply that will be made possible by the merger.

Financial Benefits and Tax Savings

Because of financial weakness, Pacific would have found it difficult, if not impossible, to attract needed capital on reasonable terms. The merged company will have a vastly better financial standing than Pacific, and El Paso will be in an even stronger position than before because of the availability of the new gas reserves. After the merger, El Paso will be entitled to utilize for federal income tax purposes a tax loss carry-over of nearly \$24 million, representing net operating losses sustained by Pacific. Pacific would probably not have sufficient earnings to enable it to use this loss carry-over advantageously.

In order to insure that savings based on the tax loss carry-over inure to the benefit of Pacific's consumers, the commission required that the merged corporation establish a special reserve, representing tax savings resulting from the merger, less the amount which could have been realized by Pacific if there were no merger. After the merger, El Paso will be required to file a plan for appropriate disposition of the reserve.

Cost Allocation and Lower Rates

The proposed merger was attacked on the ground that the cost of service would continue high for gas originating on the present Pacific system and that the cost differential would be imposed on El Paso's customers in California. The commission pointed out that the merger would afford savings that would tend to lower rates. It would eliminate duplication in service functions and would permit savings in future financing of the merged company.

Upon complaint that El Paso would

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"roll in" Pacific's costs under the system-wide method of allocation to the detriment of El Paso's customers, the commission imposed a condition requiring El Paso to maintain its accounts so as to provide data in future rate cases to show the costs of Pacific's system as part of the merged company. El Paso must account for and allocate not only direct costs but all costs

as between the present El Paso and Pacific systems and as between three portions of Pacific's system. These requirements will facilitate the allocation of system-wide costs and the designing of rates that will do justice to all customers, the commission declared. *Re Pacific Northwest Pipeline Corp. et al. Docket Nos. G-13018, G-13019, December 23, 1959.*



Interim Step in Interstate Pipelines Merger Approved

THE Federal Power Commission approved a proposal by Peoples Gulf Coast Natural Gas Pipeline Company and Texas Illinois Natural Gas Pipeline Company for a transfer of the latter's facilities and operations to Peoples Gulf. The facilities consist of a main transmission line with laterals and compressor stations carrying gas from the south Gulf coast area of Texas to Illinois. Such gas is sold to municipalities and utility companies for resale for local distribution, to Natural Gas Pipeline Company of America for resale, and to Natural Gas Storage Company of Illinois for cushion gas and operational use.

This acquisition by Peoples Gulf is an interim step in an overall plan for the eventual merger of the interstate pipelines of Natural Gas Pipeline Company of America and Peoples Gulf. Increased efficiency and a reduction in administrative problems are expected to issue from this plan.

No abandonment of service will result from the transfer since Peoples Gulf will provide all of the services now being rendered by Texas Illinois at the same rates and under the same contractual provisions. *Re Peoples Gulf Coast Nat. Gas Pipeline Co. et al. Docket No. G-19963, December 8, 1959.*



Advertising Expenses and Capital Costs Reviewed in Telephone Rate Case

THE Louisiana supreme court reversed and remanded an order (26 PUR3d 55) denying Southern Bell Telephone and Telegraph Company's request for a rate increase. It concluded that the end result reached by the commission was grossly discriminatory.

Cost of Capital

The court found that the cost of debt capital should be fixed at 5 per cent rather than 4 per cent as used by the commission, unless, it said, intervening experience justified a higher figure.

The commission had applied a formula based on a hypothetical 45 per cent debt ratio and 55 per cent common stock equity in its determination of a fair return allowance when, as a matter of fact, the company's debt ratio averaged only 24.7 per cent during the test period. The court agreed that it was within the discretion of the commission to adopt this formula. It merely disagreed with the end result rather than the method employed.

The court held that the earnings-price ratio to be applied to the hypothetical capital structure should be so adjusted

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that the end result would be a return of not less than 6 per cent. In this, the court deemed it unnecessary to determine whether the earnings-price ratio formula as used by the commission was sound or not. Again it pointed out that the end result, rather than the method used, discriminated against the company.

Discrimination

Southern Bell complained that the end result of the commission's allowance of a return of 6.75 per cent on 55 per cent of the hypothetical capital structure was such that the company would not be able to compete successfully with other utilities, having corresponding risks, for capital in the money markets. Evidence showed great disparity between the return received by Southern Bell and the return received by other utilities in Louisiana, in the nine southern states served by the company, and in the United States.

The court held that while it might be true that no formula could be laid down which would apply uniformly in all cases to all kinds of utilities, yet in fixing a rate of return consideration must be given to the return allowed other utilities similarly situated. In the instant case evidence established that no utility was receiving anywhere near as low a return as Southern Bell. The disparity was so great that the court felt compelled to set aside the commission's action.

Need for Plant Expansion

The court also stressed the importance of plant expansion, finding that it was necessary for the company to expend immediately \$49 million on an expansion program to meet the public demands. An annual expenditure thereafter of \$46 million would be required. This construction would be at inflated prices compared with previous construction costs.

It was noted that a large amount of

capital necessary to finance the expansion program must be raised in the money markets in competition with other utilities whose stocks and bonds would be more attractive to investors because of their greater returns. The court said that, while it was dealing with intrastate rates only, it could not "build a wall around Louisiana and say this capital must be raised in Louisiana alone." Even if it adopted such a provincial attitude, the court said, there would be no way of preventing utilities located in other states from competing with Southern Bell in Louisiana for Louisiana capital.

Tax Savings on Hypothetical Capital Structure

The court disagreed with the commission's reasoning with respect to a hypothetical tax saving which would result if the company had used a higher debt ratio so as to reduce its overall cost of money. It did not disagree with the commission's assumption of a higher debt ratio as such, but, it said, a change in such ratio, even if followed by the company, would take about five years to complete.

During this period the company could not actually realize the hypothetical tax savings. The court said that the company should be given a reasonable time to adjust its debt ratio to the commission's new formula, if it so desired. It believed that the commission's action, in effect, made the new formula retroactive. This was not considered just and reasonable.

Return on Accumulated Surplus

The court agreed with the commission that the company was not entitled to a return on its earned surplus. All of the company's common stock is owned by American Telephone and Telegraph Company. None of it was sold on the market. American purchased the stock at par value

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and paid nothing additional for surplus. Thus, the surplus was actually contributed by the subscribers.

The court agreed that the return should be sufficient not only to pay debt charges and a reasonable dividend on stock but also to provide a reasonable amount for surplus.

This did not mean, however, that the company was entitled to earn a return on this surplus. After all, said the court, the surplus was paid for by the subscribers, and they should not be requested to pay a return on it.

Abnormal Advertising Expenses

During the test year the company had

spent a large sum for advertising purposes, including newspaper, radio, and television, to inform the public as to its situation in connection with the application for a rate increase. The commission had disallowed this item, not on the grounds of impropriety, but because the expenditures were abnormal and nonrecurring in character, and because their inclusion in the operating expense account would distort the test-year earnings. The court agreed with this ruling, although it said the commission should make proper allowance for ordinary advertising expenses. *Southern Bell Teleph. & Teleg. Co. v. Louisiana Pub. Service Commission*, No. 44,639, January 11, 1960.



Temporary Injunction Restraining City from Interfering with Gas Company's Rates Upheld

THE Minnesota supreme court has affirmed a temporary injunction restraining the city of St. Paul from interfering with a gas company's existing rates pending the outcome of litigation. The city had contended that its rate-making power involved the exercise of a legislative function which could not be usurped by the court, that the injunction established rates which the company could charge contrary to the rates established by the city, so that the municipality's legislative function had been usurped by the court.

Some form of judicial review of the reasonableness of rates fixed by a rate-making body is an essential requirement in the exercise of due process, answered the court. Although the courts may not usurp the legislative function of rate making, they are not impotent to grant relief from confiscatory or noncompensatory rates established by the rate-making authority.

The municipality had denied the

utility's application for increased rates. Since existing conditions required rate relief, held the court, the city's action had the same effect as fixing unreasonably low rates and the utility was entitled to seek injunctive relief. The temporary injunction issued only restrained the rate-making body from enforcing existing rates during the pendency of the action. It did not establish a rate, but simply preserved the status for the parties until the case was finally determined on its merits. Granting or denying a temporary injunction, pointed out the court, involves the balancing of harm which will result to parties involved if the injunction is granted or denied.

System Revenues

The city, in one of its affidavits opposing the grant of the injunction, relied on the fact that the overall operations of the gas company would permit the company to absorb the increased cost of gas distributed to consumers in St. Paul. The

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company was engaged in an extensive electric distribution business and also distributed gas elsewhere.

St. Paul consumers, held the court, are not entitled to have the cost of gas to them subsidized by income received from other segments of the company's business. Where a utility serves multiple municipalities, the property devoted to a particular municipality or territory may be taken as a separate unit for rate-making purposes.

Where separate municipalities have the rate-making power only within the limits

of the municipality, it is essential that the property devoted to furnishing service therein be considered a separate unit for the purpose of establishing rates within that municipality. The same rule applies, said the court, as in a case where the utility business is partly intrastate and partly interstate. In such cases, the state agency has the power of fixing the rates for the business done within the state and the federal agency has the power of fixing rates for interstate business. *Northern States Power Co. v. City of St. Paul et al.* 99 NW2d 207.



Deferred Taxes under Accelerated Amortization Treated as Neither Surplus Nor Reserve

THE Utah commission authorized a change in accounting procedure in order to remove a conflict between state and federal requirements with respect to accounting for the tax effects of accelerated amortization under § 168 of the Internal Revenue Code. In 1955 the Utah commission directed the use of a restricted surplus account for deferred taxes. In 1958 the Federal Power Commission ordered the use of accounts which were neither surplus nor reserve.

While the Utah commission was not prepared to concede that the jurisdiction of the federal commission exceeded or took precedence over its own powers in this area, it recognized that a conflict be-

tween administrative orders of the two bodies, such as the one here in question, should be removed.

The state commission, finding no problem of any consequence in this accounting conflict, amended its earlier order, replacing "Earned Surplus Restricted for Future Taxes on Income" and "Current Taxes on Income Deferred in Prior Years" with the federal accounts "Accumulated Deferred Taxes on Income" and "Taxes on Income Deferred in Prior Years—Credit." The account "Provision for Deferred Taxes on Income" was designated as Account No. 507-A. *Re Utah Power & Light Co. Investigation Docket No. 66, December 29, 1959.*



Moving Base of Operations Does Not Constitute Nonuser

THE Colorado commission approved the transfer of a motor common carrier certificate to haul oil field equipment in irregular service upon call and demand, notwithstanding vigorous protests by other carriers that the transferor had abandoned its authority when it moved its base of operations from the western

part of the state to the eastern part and leased authority to perform some of the operations in the western part to a private carrier.

The commission first pointed out that the certificate was an existing property right which could not be diminished or compressed in any manner to deprive its

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owner of his property rights thereunder, without due process of law. Then the commission went on to explain the differences between abandonment and nonuser, after noting the loose interchange of the two terms by the protestants.

Abandonment, as applied to property, the commission said, necessitates a voluntary relinquishment of the possession of a thing by the owner, with the intention of divesting himself of ownership. No such situation existed in the present case. Although the transferor moved his headquarters to another part of the state, he was perfectly free to do so under his statewide authority, particularly in view of the transient nature of oil field equipment hauling. He had leased his authority to another, which indicated an intention contrary to abandonment.

Nonuser

Nonuser, continued the commission, is the failure or omission of a person to make use of a thing. When applied to a common carrier, it simply means that the carrier, who has the duty to serve and presumably has dedicated his property to do so, declines to discharge that duty. If a demand for the service exists and others move to take over the duties declined by the common carrier, then a doctrine of equitable estoppel arises to prevent the carrier so refusing to discharge his duty from re-entering the field to effect an inequitable consequence upon those who have assumed the burden of his duties.

In other words, one who has an authority as a common carrier may not sit by in complacent repose, casually observing

with interest the activities of others who aggressively move in to discharge his duties and to develop a market for the service they have to offer, and then, when the plum seems ripe for the plucking, move in and reap the benefits of the others' labor, to the possible detriment of service to the public.

Declining Area Demand

It was the theory of nonuser that the protestants sought to assert under the misnomer of abandonment. However, the evidence showed that the transferor was not guilty of nonuser. Although headquarters had been removed, there was still some operation in the area.

The fact that some service was rendered in the area, although principal service was rendered in other areas, indicated that the holder, rather than being oblivious to the demand for public service, was reacting in response to the surge and diminution, intermittently, of the demands for service upon him. The commission did not judge the intelligent exercise of common sense business judgment to be a breach of duty. Since the hauler had continued a statewide authority and the demand had been sporadic and intermittent, the mere removal of the headquarters did not give a similar hauler, whose headquarters remained in the area, a pre-emptive and inviolable right, consecrated to him for eternity, to render service exclusively in the area. *Re Johanson et al. (Johanson & Carbis Oilfield Trucking & Moving), Application No. 16645, Permit No. B-3566, Decision No. 53380, November 19, 1959.*



Shipper Display Advertising Basis for Contract Carrier Permit Grant

THE Indiana commission granted a contract motor carrier permit for the

transportation of petroleum and petroleum products where the applicant had

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shown that display advertising on the sides of the carrier's assigned vehicles was important to the shipper, that common carriers serving the area could not provide such service, and that the grant of the permit would not deprive common carriers of any business.

The commission had not previously passed upon the question of display advertising on vehicles. It had been contended that common carriers in the area could fill the shipper's needs, by including a tariff provision allowing them to assign vehicles exclusively for the use of certain shippers. However, the commission noted that the question of discrimination would appear where the same carrier was unable to supply equipment to any and all members of the public for such purposes.

Furthermore, the commission pointed out that the selection of certain shippers, by the common carriers, and the grant to them of the privilege of displaying advertising on the carrier's equipment without an appropriate tariff provision, and without providing for any other shipper to avail itself of such service, was in violation of the common carrier's duty.

The commission also disavowed any implication that the permit had been granted pursuant to the "follow the traffic" doctrine. The motor carrier applying for the contract permit had previously served the shipper in another state, but when the shipper had changed its supply situs, the carrier had incorporated in the state of Indiana.

Dissenting Opinion

Commissioner Duvall, dissenting, did

not feel that the applicant had sustained its burden of proving public need for the permit issuance. He did not feel that the display advertising argument constituted a distinct need justifying issuance of a permit, and he was not convinced that the common carriers could not legally supply the alleged need.

To conclude that the granting of the permit would not deprive or take away any business from common carriers, said the dissenting commissioner, is to conclude that a common carrier's pre-emptive right is limited to existing business and can never apply to new business coming into a community. If a new factory were built in a community and if existing common carrier service could adequately meet the requirements of that new industry, the commissioner did not believe that the commission would certificate additional common carriers on any tenuous theory that the existing common carriers were not being deprived of business.

The only added feature in this case, he thought, was the fact that it dealt with an application for a permit, and with the special needs of a particular shipper. But existing carriers, the commissioner concluded, which have expended efforts and money in establishing facilities and maintaining service to the public are entitled to all the traffic they can efficiently and economically handle. It seemed fallacious to him for the majority to argue that the permit would not deprive existing carriers of any business since they had not previously enjoyed the traffic. *Re Frank J. Sibr & Sons, Inc., of Indiana, No. 2909-B, 1, October 8, 1959.*



Excessive Depreciation Reserve Deducted and Employee Profit-sharing Expense Disallowed

THE Wyoming commission, in granting a gas company a modified rate

increase, which would produce a return of 6.35 per cent on the net investment rate

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base, held that an excessive depreciation reserve accumulated from annual depreciation charges should be deducted in its entirety from the utility's gross plant investment in determining the rate base.

If a utility deducts excessive annual depreciation expense from operating income, the commission pointed out, and plows the same back into capital investments, the consumer pays twice for depreciation. He pays day in and day out for depreciation to build up the reserve and then pays forever upon capital contributed by him. In short, this procedure makes the consumer an unwilling investor without any proprietary interest in the utility.

The commission noted that if it should allow the company to reduce book depreciation reserve to the extent that the same was excessive and thus increase net plant investment by that amount, it would be allowing the company to earn a rate of return on property contributed by consumers. Such a procedure would also permit the company again to recover depreciation on the amount of the excessive depreciation in its book reserve, and thus allow it to recover the cost of plant contributed by consumers rather than owners.

Test Period

The commission found that it should use the estimated current year-end investment, expense, and revenue figures of the company, as adjusted, for the purpose of testing the propriety of the proposed new rate schedule. Under general business and economic conditions now prevailing, the commission said, the use of such figures constitutes a more realistic approach to the problem of determining just and reasonable future rates; *i.e.*, rates which will operate prospectively.

Certificate Expenditures

The company had expended substantial

sums of money for attorney fees, travel expense, filing fees, etc., in obtaining a certificate to operate in a certain area. It sought to include such expenditures as overhead in the rate base.

A certificate issued by a public authority should not be capitalized in any amount against customers, the commission held. The amount actually and necessarily expended by a utility in obtaining a certificate may be recouped through amortization charged to operating expense over a reasonable period of time.

The commission excluded the amount of the certificate expenditures from the rate base and the amount of depreciation charges associated with such expenditures from the depreciation reserve. The undepreciated balance was to be amortized over a period of seven years.

Construction Labor Not Capitalized

Despite the commission's admonition in a previous case, the company had continued to charge construction labor cost items to operating expense. It now requested the commission to approve the capitalization thereof. The commission refused.

When a public utility has charged capital expenditures to operating expense, it said, it is improper and inequitable subsequently to capitalize them, as such accounting procedure requires consumers to pay for the expenditures twice, once when they are charged to operating expense and again when they are depreciated.

Moreover, the approval of such a procedure would permit the company to recoup the cost of plant facilities in which it has no investment. Furthermore, if the amount of labor items were capitalized, consumers would be compelled to pay a return on utility plant which they had purchased and contributed.

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Concession Rates to Company Employees

The company had for some time furnished natural gas service to its employees for the minimum monthly bill in its filed tariff schedules, regardless of the amount of gas consumed by them during any billing period.

The commission found that the company should discontinue the practice of furnishing gas to its employees at concession rates, that such practice results in discrimination against other consumers of the same class who are required to pay full tariff rates for similar service.

Profit-sharing Plan

The company sought to charge payments made under a pension plan agreement for the benefit of the employees. The commission held that such payments were not proper and legitimate items of operating expense. It pointed out that any profit-sharing plan is more adaptable to

a profit-sharing enterprise than a public utility, as the rate of return of the latter is regulated.

Viewed in its true perspective, the commission said, a profit-sharing plan is a plan under which a company divides the net profits of its business with its employees after all business expenses, including taxes, have been paid, in the same manner as if they were limited partners in the business. In the commission's opinion, such payments do not constitute a business cost, and stating them as such in expense accounts is a misnomer.

If the company wants to make payments to the trustee out of its net profits, as the agreement provides, for the purpose of reducing income tax—i.e., in the same manner as dividends are paid to stockholders—and refrain from treating them as built-in profits, the commission said, it would not interfere. *Re Wyoming Gas Co. Docket No. 9364, December 9, 1959.*



Use of "Normalized" Winter Rejected in Determining Revenue Requirement of Gas Company

THE Georgia commission granted Gas Light Company of Columbus a rate increase to cover increased costs (including a recent rise in the cost of purchased gas) and otherwise to improve the company's rate of return. Rejected, however, was a claim for substantial additional revenues to provide for an adjustment in pro forma computations to reflect a so-called "normal" winter, rather than the actual operating results of the latest 12-month period available.

Use of "Normal" Winter Argued

It was contended that the test-period winter of 1958-59 was colder than normal, having 3,213 degree-days deficiency computed on a 70-degree base. The company asserted that the "normal" winter for the ten-year period ending with

the 1957-58 winter contained 3,039 degree-days deficiency. It was urged that the use of the 1958-59 test-year winter, with the greater deficiency, would unduly inflate the indicated revenues.

The commission noted that the company had omitted the 1958-59 winter in calculating its "normal" winter. A ten-year average using the 1958-59 winter would considerably increase the degree-day deficiency of the "normal" winter. On such a basis the test-year winter would be only 3.6 per cent colder than the "normal" winter, rather than the 5.7 per cent indicated in the company's calculations.

In any event the commission thought the necessity for "normalizing" had not been convincingly demonstrated. According to United States Weather Bureau computations, using a 30-year period, the

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1958-59 test year was only 1.3 per cent colder than "normal" on the 70-degree base and only .3 per cent colder when considered on a 65-degree base. Furthermore, forecasts point to colder weather for future winters. The commission concluded that the deviation of the test-period winter from the so-called "normal" was well within an acceptable range of deviation. The test-period winter of 1958-59 was therefore used.

Protestants Question Return

Protestants contended that the rate of return was excessive and that the company should be required to absorb a substantial portion of the increased costs. But calculations submitted to support this position were based strictly on rate of return requirements and failed to give consideration to other relevant factors, the commission pointed out. They failed to recognize that additional revenue was required in order to maintain the present reasonable 72 per cent pay-out ratio and to sustain reasonable dividends.

These calculations overlooked the necessity for a return adequate to attract capital for needed expansion. Also omitted from their consideration was the increased earnings requirement of risk capital where low equity ratios are maintained. The applicant's capitalization contained only 27 per cent common equity and 13 per cent preferred stock.

Rates to Fort Benning

The Army urged that, because of the size of the load furnished to Fort Benning and the importance of this load to the overall operations of the applicant, it

should be given preferential treatment in the distribution of the authorized revenue increase. It alleged discrimination.

As far as Gas Light's supplier is concerned, the company may allocate its deliveries between the Fort Benning delivery point and the Columbus delivery point in any manner it desires, though it may not exceed the total allocation available from the pipeline. In order to provide increases in Fort Benning's contract demand in recent years, the company has had to reduce its take at its Columbus delivery point, which point would normally serve the growth in the southern portion of the city, and concurrently increase its take at the Fort Benning delivery point north of the city. As a result of this shifting of loads, the applicant has had to reinforce its main distribution plant substantially in order to transport large volumes of gas from its northern delivery point to the southern part of the city. Therefore, while Fort Benning does not physically connect to the main distribution system in the city, any change in this large consumer's load requirements has an immediate and substantial effect on the main distribution plant similar to that of any major load connected directly to the distribution plant serving any city.

The commission thought there was no reason to grant Fort Benning any further preference than it now receives by reason of its being on the company's large volume interruptible rate for the purpose of serving what is primarily a residential heating load. *Re Gas Light Co. of Columbus, File No. 19462, Docket No. 1478-U, November 13, 1959.*



Rate Base Adjusted to Offset Inflation

THE New Jersey commission reaffirmed a rate increase for New Jersey Bell

Telephone Company. The higher rates had been originally ordered on December

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30, 1957 (22 PUR3d 166), and modified by another order on June 19, 1958 (24 PUR3d 181). The commission had added \$25.5 million to the net investment (net original cost) rate base to offset inflation. On appeal, the New Jersey supreme court had remanded the matter to the commission for further findings in support of the inclusion of that sum over and above the end-of-period net investment (29 PUR3d 87).

The commission found that inflation had had the economic effect of reducing the purchasing power of the dollar substantially from pre-World War II levels. In particular, on the basis of the record in this case, it found that inflation had had such an impact on the company that net investment, stated in terms of original cost, did not fully reflect the fair value of the company's property used in the public service.

The rate base adjustment had been arrived at after consideration of many factors, since no one factor, standing alone, is decisive or in any manner controlling. The company had offered evidence to show that the investment per added telephone instrument during the test year exceeded what the same number of instruments would have cost if they could have been added at the same rate of investment per telephone existing in the preceding year.

The commission also considered evidence that the benefits of mechanization had already largely been realized. It inferred from this that the excess invest-

ment occurring during the test period was not due to a more intensive investment in plant, to using more equipment per telephone instrument, but rather to an increase in the cost of the same quantitative amount of plant per telephone instrument used in rendering service.

The allowance of \$25.5 million in the rate base was about 5 per cent of net investment as of the end of the test period. The company had offered evidence to support a finding of fact that current value of its property devoted to public service was 28 per cent above the average test period net plant investment. This was based on a trended original cost survey.

In its earlier decision the commission had concluded that, taken by itself, such a study did not give a reliable measure of the value of the property. However, it was an indication that inflationary factors were having a serious effect on the company's property, confirming the commission's decision to include the additional sum as a reasonable allowance for the effects of inflation.

In reaffirming the orders, the commission alluded to the court's statement that the commission may "exercise reasonable expert judgment based upon all of the relevant factors." The commission concluded that its action constituted a proper exercise of the rate-making discretion delegated by the legislature. *Re New Jersey Bell Teleph. Co. Docket No. 596-10049, December 7, 1959.*

Other Recent Rulings

Gas Utility Return. The Tennessee commission approved gas rates affording a rate of return 6.90 per cent based on the company's accomplishing a projected full development during the forthcoming year,

eliminating stand-by production plant from the rate base and not allowing for necessary regulatory lag. *Re Cleveland Nat. Gas Co. Docket No. U-4299, December 9, 1959.*

PROGRESS OF REGULATION

Refund Moneys to Be Held. Chattanooga Gas Company, granted a rate increase substantially to offset an increase in the cost of purchased gas, was required by the Tennessee commission to hold for disposition by the commission any refund that it might subsequently receive from its supplier, whose effective rates were in litigation. *Re Chattanooga Gas Co. Docket No. U-4337, December 9, 1959.*

Rates after Dial Conversion. The Indiana commission has authorized Kirksville Telephone Company to increase rates sufficiently to provide a fair return on the increased value of its properties, upon the completion of a dial conversion program. *Re Kirksville Teleph. Co. No. 28165, September 25, 1959.*

Increased Class Rates. The Colorado commission granted a motor carrier association's application for increased class rates for line haul scheduled carriers where, despite operating economies put into effect, the carriers were not earning sufficient revenues to cover cost of operation and provide a margin of profit. *Re McKie Transfer Co. et al. I. & S. Docket No. 429, Decision No. 53211, October 8, 1959.*

Urban and Suburban Telephone Service. The Indiana commission authorized a telephone company to discontinue four-party residence service and eight-party rural service in a certain exchange area, upon conversion to dial operation, and to substitute urban and suburban service with no more than two parties per line in the urban or base rate area and no more than four parties per line in the suburban areas. *Re Indiana Bell Teleph. Co., Inc. No. 28332, October 23, 1959.*

Extended Area Service. The Indiana

commission approved a telephone company's application for authority to establish extended area service between certain exchanges upon a showing that there was a community of interest between subscribers of such exchanges and that the majority of such subscribers desired extended area service even though they knew it would result in increased rates. *Re General Teleph. Co. of Indiana, Inc. No. 28318, October 30, 1959.*

Increased Telephone Rates. The Nebraska commission granted a telephone company increased rates which would produce a return of 6.39 per cent on the net plant rate base, and made the increased rates effective, at one exchange, on the first billing date following conversion to dial operation, and at another exchange on the first billing date following completion of metalization. *Re Home Teleph. Co. of Nebraska, Application No. 21932, October 30, 1959.*

Lowest Lawful Rate. The California commission pointed out that, while a radial highway common carrier could look to the tariffs of common carriers to determine a lowest lawful rate, a certificated highway common carrier could not go beyond the face of its tariff to determine such a rate. *Re Winans Bros. Trucking Co. Decision No. 59216, Case No. 6107, November 3, 1959.*

Preferred Freight Rate Treatment. The California commission denied an application for a certificate to operate as a freight forwarder and for authority to charge less than the minimum rates to shippers using the freight forwarding service on the basis that a restriction sought by the applicant limiting service to shipments originating at its highway common carrier parent's warehouses would produce

PUBLIC UTILITIES FORTNIGHTLY

discriminatory results. *Re Thompson Bros. Freight Forwarding Co., Inc. Decision No. 59251, Application No. 41075, November 10, 1959.*

Intermediate Points. The Colorado commission held that the holder of a private motor carrier permit which authorized service at cities named as intermediate points was not restricted to the incorporated limits of the named cities but was authorized to serve the areas surrounding such cities. *Re Ephraim Freightways, Inc. Application Nos. 16977-PP, 17077-PP, Decision Nos. 53375, 53376, November 17, 1959.*

Ash and Trash Certificates. The Colorado commission granted three applications for ash and trash carrier certificates, notwithstanding vigorous protests by existing carriers, where the harm that might accrue to existing carriers was offset by the creation of additional competition to control rates and service. *Re Bosman et al. (Best Way Disposal), Application Nos. 17301 et al. Decision No. 53377, November 18, 1959.*

Increased Bus Fares. The Illinois commission granted a bus company in need of additional revenues permission to eliminate 26- and 52-ride commutation fares, increase minimum adult fares from 10 cents to 15 cents per ride, and cancel the existing basis of 180 per cent of the one-way fare for a round-trip ticket on all fares of one dollar or less. *Re Vandalia Bus Line, Inc. No. 46277, November 18, 1959.*

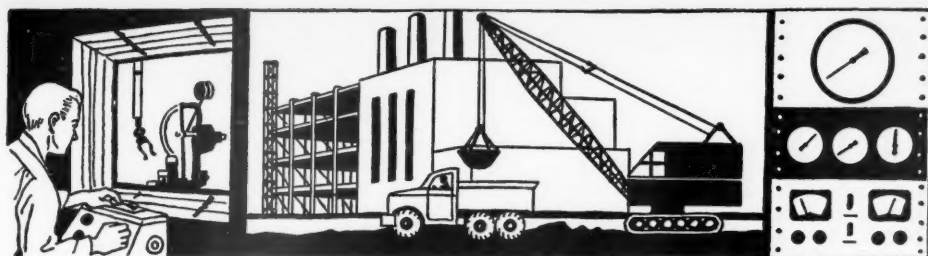
Rubber Class Rates. The Connecticut commission approved a motor common carrier's application to have the transpor-

tation of synthetic rubber, natural rubber, and tire cord exempted from a commission rate stabilization order establishing minimum uniform single class rates where such transportation was a specialized service performed pursuant to reasonably compensatory rates. *Re Motor Common Carrier Rates, Docket 9652, 9652-9, November 19, 1959.*

Municipal Water District Return. The Wisconsin commission authorized a newly certificated municipal water district to charge rates which would produce a return of 6.5 per cent on a rate base equivalent to the estimated cost of the proposed plant less contributions in aid of construction, plus an amount for working capital. *Re Windsor Sanitary Dist No. 1, CA-3786, November 30, 1959.*

Municipal Plant Return. A return of approximately 5.5 per cent on a municipal water plant's net book value rate base was considered reasonable by the Wisconsin commission. *Re Village of Spring Green, 2-U-5274, November 30, 1959.*

Telephone Exchange Boundary. The Massachusetts commission denied a subscriber's request that a telephone company be directed to extend the boundaries of one exchange to serve customers presently located within another exchange area where there was not sufficient unanimity of sentiment to warrant the change requested and the benefit to be derived by the customers requesting the change would have been offset by the detriment suffered by those opposed to it. *Burns v. New England Teleph. & Teleg. Co. DPU 12959, December 1, 1959.*



Industrial Progress

Con. Ed. of N. Y. to Spend \$225,000,000 in 1960

expenditure of more than a half-billion dollars a day is anticipated by Consolidated Edison Company of New York, Inc., for expansion programs during 1960.

The construction plans call for an expenditure of \$225 million. The program is part of an estimated budget of \$1.2 billion for the five years 1960 through 1964. The budget was announced by Charles B. Delafield, vice president in charge of finance.

The company also announced that major projects will absorb most of the expansion and construction program in 1960. Those six are: 1. Completion of a fourth electric generating unit at the Astoria power station. 2. Ground breaking this spring for a fifth electric generating unit at the Astoria station to be completed by the summer of 1962. 3. Major completion of the Indian Point nuclear power facility at Buchanan, N. Y. 4. Major extensions for the electric transmission systems to bulk power stations in Manhattan, Queens, the Bronx, Brooklyn, and Westchester. 5. Completion of reinforcement of transmission cable ties between Con Ed major generating stations and substation power plants. 6. Reinforcement of equipment and cables in the streets which customer wiring is attached. In five years Con Edison anticipates electric load growth of approximately 1,230,000 kilowatts. About 40 percent (or 500,000 kilowatts) of the expected growth will be going into the nine square mile area in Manhattan from the Battery north to 59th street.

The present generating capacity of Con Edison's twelve stations is 4,000 kilowatts. Last summer the company completed a 350,000 kilowatt generating unit at Arthur Kill on Staten Island and purchased the

Transit Authority power plants. When the 360,000 unit at Astoria is completed this year the station will produce over a million kilowatts and when all five Astoria units are operating the station will be capable of producing a total of 1,435,000 kilowatts.

\$319,000,000 Program Planned By Philadelphia Electric

PHILADELPHIA Electric Company plans to spend \$319,000,000 for new construction in the next four years.

The utility's continuing construction program over the past ten years has necessitated expenditures of nearly \$750 million. Today, P.E. has nearly \$1½ billion invested in plant, about two-thirds of which was built in the past decade.

Philadelphia Electric is pursuing an extensive research, development, and improvement program aimed at achieving greater operating efficiencies and improved service to customers. Construction of the new Eddystone electric generating station is currently the major project in this program. Designed to be the world's most efficient power plant, Eddystone will have two 325,000-kilowatt supercritical pressure generating units, and will produce one kilowatt-hour of electricity from only six-tenths of a pound of coal. The first unit will operate at 5000 pounds pressure and 1200 degrees Fahrenheit, which establishes a new bench mark in power plant operation.

The atomic power station to be built on the Susquehanna river at Peach Bottom, Pennsylvania, by High Temperature Reactor Development Associates, Inc., composed of Philadelphia Electric and 52 other utilities, is scheduled for completion in the latter part of 1963. It will be owned and operated by Philadelphia Electric Company.

An extensive study of the economic feasibility of using decentralized, peak-shaving generating units during peak load periods is under way. One pilot installation of 4200 kilowatts capacity is presently in operation, and two additional gas turbine units, with a combined capacity of 42,500 kilowatts, are on order.

The company will install this year an automatic power dispatching system, incorporating a digital computer to improve power production control.

A large-scale, electronic computer system has been ordered for application in billing and data-processing operations related to handling the accounts of the company's 1,400,000 customers. The system will also be applied to other accounting activities and to a growing variety of engineering, technical, and economic studies.

CILCO Construction Budget Announced

E. D. EDWARDS, president of Central Illinois Light Company, announced recently that the 1960 construction budget for CILCO would total approximately \$17,000,000.

The electric department's budget of \$11,534,000 includes \$5,765,000 needed for the completion of the E. D. Edwards station and the necessary transmission facilities to link this plant into the company's system. This new power station, named for Mr. Edwards, is scheduled for initial testing operations in April and for commercial operation in June of this year. The remaining \$5,769,000 in the electric budget is for general strengthening of the present transmission and distribution system and for facilities to serve new business.

The gas department's budget totals \$5,048,000 and is for strengthening of the distribution system and for dis-

(Continued on page 20)

INDUSTRIAL PROGRESS—(Continued)

tribution facilities to serve new customers.

The remaining \$418,000 is for the steam heat department, general miscellaneous equipment such as automotive, office furniture and fixtures, tools and general improvements to buildings.

Florida Power & Light Plans \$485 Million Construction

FLORIDA Power & Light Company recently announced a \$485,000,000

construction program, through 1964. McGregor Smith, board chairman, said new generating plants in the program's first four years "are already under construction and under contract."

Though approval of this year's construction financing is pending, the company expects to spend about \$78 million.

New generating facilities under contract are: Port Everglades, 240,000 kilowatts to be operating in May,

1960; a second 240,000-kilowatt unit at Port Everglades to begin generating in 1961; Riviera Beach, 300,000 kilowatts in 1962, and a second 300,000 kilowatts at Riviera Beach, 1963. Locations of subsequent generating facilities are not yet decided, McGregor Smith said.

Florida Power's present capacity is 1,650,000 kilowatts. New units in the next five years will boost it to 2,730,000 kilowatts.

A-C Bulletin on JFR Distribution Voltage Regulator

TWENTY-THREE JFR distribution voltage regulator features designed to provide more economy and better voltage regulation are described and portrayed in a new bulletin released by Allis-Chalmers.

According to the announcement, the new regulator's smaller size—33 per cent in height and weight—assures greater versatility in platform and substation mounting.

When pole mounted, the compartments can be remotely located to permit electrical adjustments of the regulator's position indicator from the ground, a standard feature exclusive to the industry, extremely useful in system analysis work.

Copies of "JFR Distribution Voltage Regulators," 21B7977E, are available on request from Allis-Chalmers, Milwaukee 1, Wis.

\$50,000,000 Expansion Is Planned by CG&E

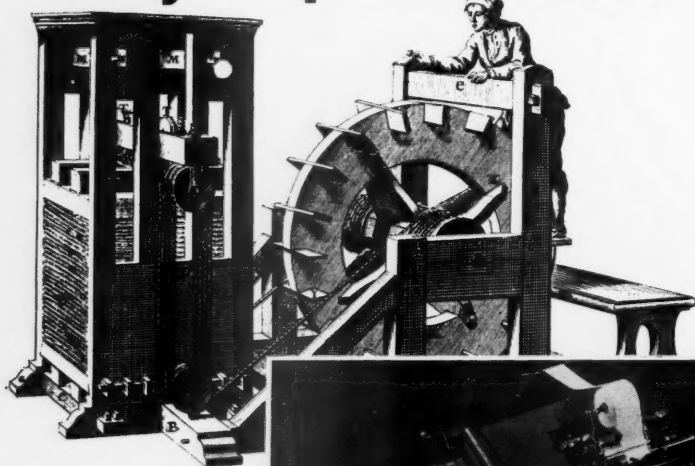
A \$50,000,000 expansion program was announced recently by the Cincinnati Gas & Electric Company. Ernest S. Fields, CG&E president, said the program revolved around construction of a fifth generating unit capable of 250,000 kilowatts capacity at the Walter C. Beckjord station near New Richmond, Ohio.

Largest in the CG&E system, the new unit will be ready for service by the fall of 1962.

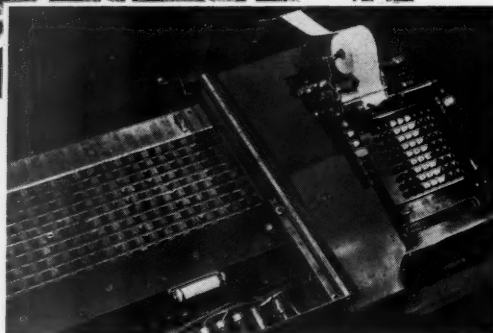
The new unit will increase CG&E investment in the Beckjord station and its transmission facilities to \$100,000,000, Mr. Fields stated. A fourth unit of 165,000 kilowatts capacity, costing \$24,000,000 was placed in operation at the plant last year. A similar unit costing \$27,000,000, is now being installed in the Miami Fort station at Columbia Park and will be completed late in 1960.

CG&E will spend an average

many steps vs. "ONE"



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INDUSTRIAL PROGRESS—(Continued)

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The paper presents the results of
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production and quality control of
pure condensate feedwater for
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presented on the filtration and
mineralization process for treating
condensate and specific plant-scale de
tails features based on the data are
described. Analytical methods for
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Kansas Pwr. & Lt. to Spend \$35,000,000 in 1960

KANSAS Power & Light Com
pany's 1960 construction and expan
sion program will require expendi
tures of nearly \$35 million, according
to E. Ritchie, president.

The 1960 program is the largest
since 1953. It compares with an ex
pansion program of some \$32 million
in 1959.

The AP&L president pointed out
that the major share of the 1960
program is earmarked for the new 325,
kilowatt steam electric station now
under construction on the banks of
the Mississippi river, near Helena.
Construction costs at this project will
amount to nearly \$19 million during
the new year.

Other construction expenditures
for 1960 are estimated at \$5.1 million
for construction of high-voltage lines
and substations; \$9.4 million for ex
tending and improving urban and

rural distribution lines and substations; and \$1.4 million for the construction and remodeling of company office and service facilities.

Conn. Light Expansion To Cost \$31.8 Million

A \$31.8 million construction program will be carried out in 1960 to build new facilities and expand existing ones by the Connecticut Light and Power Company, Sherman R. Knapp, president revealed recently.

The company's construction plans involve about 100 projects, including the \$11,525,000 Norwalk Harbor station; increasing transmission lines carrying capacity from Montville to Willimantic, Norwalk to Shepaug, Devon to Frost Bridge, near Thomaston, and Frost Bridge to Southington, about \$2.3 million; and about \$2.6 million to increase the capacity of substations serving these transmission lines. Also involved is \$1.8 million for propane gas facilities in Norwalk and Waterbury.

PG&E Reports Huge Growth, Plans for 1960

PACIFIC Gas and Electric Company enters the 1960 decade with 1,300,000 more customers than it had at the beginning of 1950, according to Norman R. Sutherland, president. The year-end total of 3,560,000 customers is almost 60 per cent more than the company served 10 years ago.

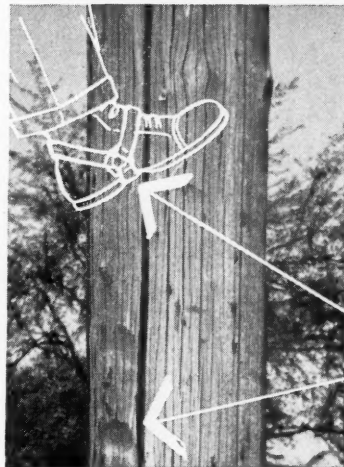
Building ahead of demand to serve the continuing growth, PG&E will spend an estimated \$152 million in 1960 for construction of new facilities, Mr. Sutherland said. The company's construction expenditures during the 1950 decade have totaled \$1,694,000,000, and since World War II almost \$2,200,000,000.

"Not only has the number of our customers greatly increased, but also the per capita consumption of energy is continuously rising," Sutherland said. "The average annual consumption of electricity by our domestic customers, for example, is more than two-thirds greater now than it was 10 years ago. Our sales of both gas and electricity to all classes of customers have more than doubled in the decade.

"Despite these large increases, we have met all demands for service by forecasting the growth accurately and beginning construction well in advance. At the beginning of 1950 we had 2,099,200 kilowatts of electric generating capacity. Today we have

(Continued on page 22)

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SERVING UTILITIES SINCE 1935

5,219,000 kilowatts, 2½ times as much. In 1950 we began for the first time to import natural gas from out of state through a pipeline whose construction we began investigating as early as 1944. Today that pipeline has been paralleled by a second line over its entire 502-mile length from the California-Arizona border, and those two lines transport about three-fourths of our requirements for serving our gas customers. We are working now to be able to serve both gas and electric demands which will arise several years from now."

The company's electric generating capacity will be increased in 1960 by 337,500 kilowatts. At Pittsburg power plant in Contra Costa county a turbo-generator unit of 325,000 kilowatts capacity will be placed in service. Construction will continue on a unit of the same size which will be completed in 1961.

A unit of 12,500 kilowatts capacity will be brought in at the Geysers power plant, which is under construction in northeastern Sonoma county to utilize natural steam from the earth. Near Eureka ground breaking is scheduled in 1960 for a 60,000-kilowatt atomic electric generating unit at the Humboldt Bay Power Plant.

The company also is at work on the Kings river, Fresno county, driving a tunnel 18,546 feet in length for the 42,000-kilowatt Kings River Powerhouse, which is scheduled for service in 1962. This plant will complete the company's 261,500-kilowatt Kings river project on which construction was begun in 1955.

Meanwhile, Mr. Sutherland said, engineering planning is proceeding for generating capacity additions after 1962. PG&E expects, he said, that an increasing proportion of this new capacity will be installed in atomic power plants.

\$17,000,000 Expenditure Planned By Delaware Power & Lt.

THE Delaware Power & Light Company and its subsidiaries plan to spend more than \$17 million on new construction during 1960, according to an announcement by F. P. Hyer, president.

The major construction project will be the start of work on an additional generating unit to be placed in operation by the end of 1961.

Mr. Hyer pointed out that 1960 is the 15th consecutive year of expansion by the company and its sub-

sidiaries, The Eastern Shore Public Service Company of Maryland, and Eastern Shore Public Service Company of Virginia. This expansion program has been highly successful in enabling the company's system to meet the ever-increasing needs of industries, farms and homes everywhere throughout their service area.

Continued growth of communities and industries on Delmarva Peninsula, as foreseen by Delaware Power & Light Company, was largely responsible for the decision to construct new facilities during the coming year to meet future requirements of new customers and to firm up or increase capacity to present customers. This will require over \$1,890,000 for electric and gas transmission lines, substations and equipment; and almost \$9,900,000 for new and additional electric and gas distribution facilities.

New Control Center Designed For Central Station Use

A NEW control center designed specifically for use in generating stations has been introduced by Westinghouse Electric Corporation. It provides for the group control of motors through 200 hp.

All controls are centralized in one group of standardized enclosures 90½ inches high. Modular units have uniform width and depth while heights vary from 14 to 70 inches in multiples of 14 inches, permitting additions or interchanges with minimum delay.

All units are accessible from front and all wiring is accessible through hinged, full-length rear doors.

Steel barriers isolate the full-length rear wiring compartment from the vertical bus, while horizontal bus is at front of structure to prevent accidental contact.

Compartments are isolated by individually interlocked doors and breaker handles must be turned to the "OFF" position before door can be opened. Baffling in each starter unit serves as a de-ionizing safety shield for localizing any fault.

Knockouts in the right-hand supporting member of each separate unit permit wires to be fed directly to the rear wiring compartment.

Units are available approximately 10 weeks after order received. Prices quoted on request.

For further information, write Westinghouse Electric Corporation, P. O. Box 2099, Pittsburgh 30, Pa.

Power First! Gas-Coal Turbine To Be Installed

A GENERATING cycle combining a steam turbine and a gas turbine will be installed in an Ohio power plant. It will be used for the first time in production of electric energy by a coal-burning plant.

This will be accomplished by the installation of a 5,000-kilowatt gas turbine, driven by coal gas, at the Muskingum river plant of the Ohio Power Company at Beavercreek, Ohio. The gas turbine will be adjacent to, and will operate in a combined cycle with one of the plant's existing 215,000-kw steam turbines.

The decision to proceed with the installation was announced jointly recently by Philip Sporn, president of American Electric Power Company and of Ohio Power, its subsidiary operating company, and by William S. Ginn, vice president and general manager, Turbine Division, General Electric Company.

It is expected that the gas turbine will be completed and in operation by the Spring of 1961.

Objective of the combination is added efficiency of generation. A later full-scale application of this principle, an improvement of 4 per cent in over-all efficiency is expected to be achieved.

The new gas turbine unit now will generate an additional block of 5,000-kw of electric power on its own, but it will also supply combustion byproducts to the steam boiler, will reduce the amount of coal required by the boiler to feed the 215,000-kw steam turbine.

Previously, the use of gas turbines in power production has been limited and they have burned only natural gas, distillate and Bunker C oils. At the Muskingum river installation will be the first time that coal gas will be used.

Because the installation is experimental in some respects, only a portion of the gas turbine capacity will be used in combination with the steam turbine as large as 215,000 kw will be employed. It is anticipated, however, that successful operation of the unit will lead to gas turbine-steam turbine combinations in which the gas turbine capacity will be a greater part of the total and in which much larger gas turbines than now designed and built to date might be utilized.

INDUSTRIAL PROGRESS—(Continued)

C.&P. Tel. to Spend \$858,000 In District of Columbia

The Board of Directors of The Chesapeake and Potomac Telephone Company at a recent meeting approved the expenditure of \$858,000 for plant additions and improvements in the District of Columbia.

Holmes Vogel, vice president in charge of the Potomac Telephone Company, said this appropriation will be expended for new central office equipment in the Georgetown office and on a number of smaller projects required to meet the continuing demand for telephone service.

At the end of the year, there were 619,173 telephones in service in the District of Columbia, representing an increase of 21,265 over the same period a year ago.

Virginia Electric & Pwr. Continues Expansion Program

VIRGINIA Electric and Power Company spent a total of \$47,016,000 during 1959 on new construction, according to A. H. McDowell, president.

Construction now underway includes a \$21,000,000 generating unit at the company's Chesterfield power plant, located south of Richmond. This unit will go into operation in May 1960. By 1962, Vepco will be able of providing 2,485,000 kilowatts of electricity, an 8 per cent more than at the present time, Mr. McDowell added.

An application is now pending before the Federal Power Commission for Vepco to build a dam and hydroelectric generating station on the Roanoke River near Gaston, N. C. If the license is granted, the company will begin construction immediately. The project is estimated to cost \$50,000,000 and will add 200,000 kilowatts of capacity to Vepco's expanding generating program.

Gains in Sales and Investment In Gas Industry Forecast

The GAS industry will double its sales and investment in facilities and equipment during the next decade, according to the president of the American Gas Association predicted.

Walter H. Ligon, who is also president of the Nashville Gas Co., Nashville, Tenn., told the AGA's annual service workshop that sales will climb from the present 87 billion therms of gas a year to 153 billion therms in 1969.

Gas revenues are expected to reach \$11 billion annually, compared with today's \$5 billion, he said. Plant investments will increase from \$20 billion to \$45 billion, and customers will increase at least 40 per cent, he anticipated.

Mr. Ligon said the prospect was based on population growth, new home building, urban development and the rising per capita consumption of energy.

"Actually, our estimates may be on the conservative side," Mr. Ligon said.

He delegates to the workshop, held recently in Nashville, represented more than 150 gas utility companies in the United States and Canada.

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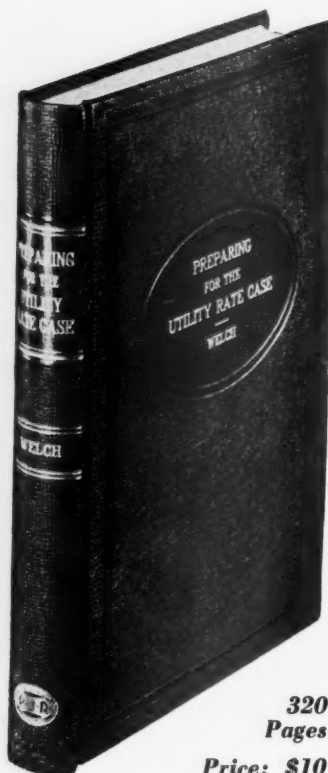
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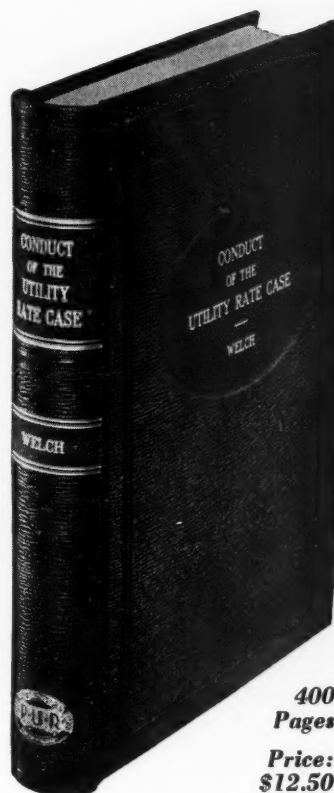
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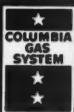
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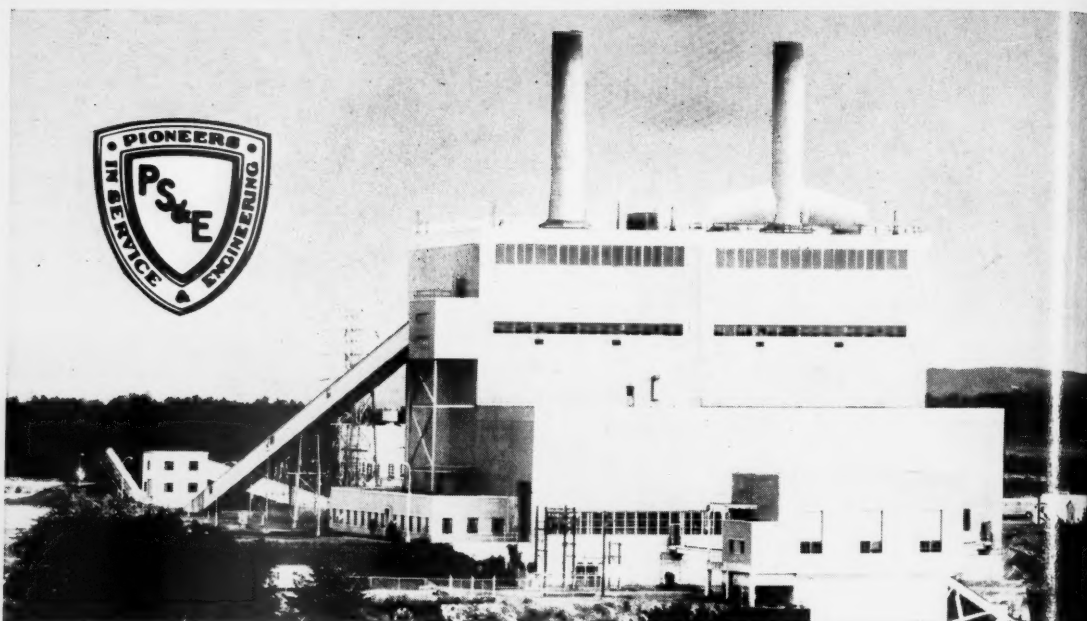


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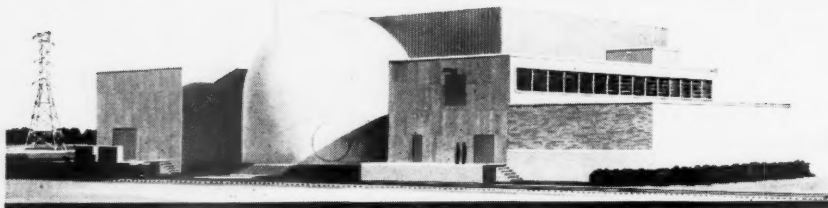
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